

Examiner during the interview. Generally, the interview was directed primarily toward considering the similarity of Applicant's "selectivity logic" and related structures to the claimed "filter function means".

Subsequent to the interview, Examiner issued a final action (09/04/2002). Despite a notification to the U.S. Patent and Trademark Office of a change of address and a new power of attorney, the final action was unfortunately transmitted to Applicant's prior attorneys, Lyon & Lyon, a law firm now dissolved. Now, finally, in possession of the case, Applicant's representatives hereby respond to the final action by requesting continued prosecution and submitting this amendment.

With respect to the organization of this amendment, it is noteworthy that the final office action variously rejected the claims on the basis of: 35 USC § 112, 35 USC § 103 and 35 USC § 102. Generally, the rejections under § 102 and § 103 were based on a treatment of the claims as though they were void of the elements that are contended by the Examiner to be undisclosed in the rejection under § 112. Each of the rejections are treated below along with contentions: (1) that the disclosure clearly would "enable any person skilled in the art to which it pertains, --- to make and use the same" (35 USC § 112); and (2) the disclosure clearly supports the amendments specified above with variations readily apparent to one skilled in the art.

The central issues raised by the final rejection appear to be concentrated in the claim element: "**filter means for filtering** -----." For example, there is a question as to whether the function of the element "filter means-----" is limited to defining vendors in terms of conditions such as geographic location, quantity, language spoken, currency, special conditions of sale, and the like." (See the claims source, '328 patent, Abstract). Upon delving further into the specification, one notes that indeed merchandise is also used as a condition (FIG. 2A).

If the "filter" claim element is so limited, a further question is raised: What is the scope of the terms "and the like?"

More specifically to the current situation, Applicant concludes that the "filter means---" element clearly embraces processing whereby a buyer distributes a "request for proposal" to a select group of vendors based on merchandise codes (See Applicant's Specification, page 44, lines 24-26). The analysis for such a conclusion follows.

The claim element: "filter means----" in claim 17 raises a presumption, by reason of the word "means," that interpretation may be required under 35 USC § 112, ¶ 6. However, under the

authorities, if the structural language is sufficient to connote a known structure, the rules of 35 USC § 112, ¶ 6 do not apply, [Enviroco Corp. v Clestra Clean Room, Inc., 209 F. 3d 1360, 1365 (Fed. Cir. 2000)]. Thus, if the stated function of the "filter means" connotes a well defined structure, then § 112, ¶ 6 does not apply.

To consider the meaning of the term "filter," reference is made to a technical dictionary, specifically: Microsoft Computer Dictionary 4th Edition, published by Microsoftpress, copyright 1999. The number one definition of the term "filter" in the reference is: "a program or set of features within a program that reads its standard or designated input, transfers the input in some desired way and then writes the output to its standard or designated output designation." Simply, a filter may be a program, and a program is defined in the same text as "a sequence of instructions that can be executed by a computer".

To consider an earlier text, a technical dictionary, Sippl defines a "filter" as: "a device or program that separates data, signal, or material in accordance with specified criteria." Computer Dictionary and Handbook, Charles J. Sippl, et ano., Howard W. Sams & Co., Inc., 1978. See Exhibit A.

The "filter-means" element of the claim further specifies the function performed, i.e., "to determine which network members---". Clearly, in the late 1990s, such a function clearly connoted a well-defined structure. Consequently, a strong basis exists for contending that the "filter means" element is not subject to interpretation under § 112, ¶ 6.

If § 112, ¶ 6 is not applicable, then the claim construction principle should be applied that the plain and ordinary meaning of the claim language is controlling, absent a compelling reason to define the claim language differently, Texas Digital Systems, Inc. v Telegenix, Inc., 308 F. 3d 1193, 1202 (Fed Cir. 2002). Essentially, the claims mean what they say K-2 Corp. v. Salomon/North America, Inc., 191 F. 3d 1356, 1370 (Fed Cir. 1999).

The above analysis distills to a relatively simple issue. Does the "filter means" element embrace distributing a request for a proposal to a select group or subgroup of vendors based on merchandise codes? Such a question is posed by Applicant's extensive disclosure involving the merchandise codes appearing on page 38 and vendor selection (page 44, lines 25-26).

Within the common meaning of the terms "filter" and "filtering" (note dictionary definitions) the selectivity operations of Applicant's system are clearly responsive. Simply

stated, the system determines a "select group or subgroup of vendors based on merchandise codes" (page 44, lines 25-26) implemented by the selectivity logic 47 and related components.

Furthermore, note that the selected vendors or "network members" receive a "request for proposal" (page 38, line 28) distributed according to the selection (page 44, lines 25-26).

The selectivity or filtering operation is based on conditions set up by the buyer in the request for proposal (see FIGURE 9) specifically in the form of the merchandise codes as described on page 43. Accordingly, the system (FIGURE 5, T16 and storage unit T26) isolates the appropriate vendors in a manner similar to the operation described with respect to buyers at page 43 beginning on line 28. In the embodiment of FIGURE 2, the operation is executed primarily by the selectivity logic 47 (See page 24).

Essentially, the buyer sets up the conditions for the "request for proposal (FIGURE 9) in the form of merchandise codes and other conditions, which are then processed in accordance with the filtering conditions (merchandise codes, etc.) and the selected merchandise code to accomplish the filtering or selection operation.

Based on the above analysis, if the "plain meaning" rules of interpretation are applied, the claim element clearly describes Applicant's disclosed system. Of course, that which is within the scope of a claim also supports the claim. Accordingly, Applicant's system supports the claim element "filter means" based on the plain meaning of the language.

While the above analysis is submitted to be correct, a possibility exists that the claim element "filter means" might be urged for interpretation in accordance with 35 USC § 112, ¶ 6. Accordingly, the specification of the '328 patent is to be considered regarding the disclosure of "filter means". In that regard, note that, regarding the term "filter conditions" (appearing in the claim) the patent abstract states: "Filter conditions may define the class of vendors in terms of geographical locations, quantity, language spoken, currency, special conditions of sale, and the like."

On that basis, it might be asserted that "filter conditions" do not embrace merchandise data, as merchandise codes. However, in general, patent abstracts are not to be used as a basis for claim interpretations. Also, the abstract leaves in doubt what conditions might be embraced by the terms "and the like".

Turning to the specification proper, the "conditions" are described in column 5, e.g., see line 11. In that regard, note the flow diagram of FIGURE 2A of the Patent, in which the fourth

box specifies processing a request to select "vendors who sell the requested product(s) and meet the filter requirements of the buyer". Clearly, as described in the '328 patent, the process must involve selecting vendors who sell the requested product. That operation is supported by the specification text in column 5, specifically see lines 17 and 27. Thus, the disclosed embodiment of the '328 patent clearly involves selection of vendors who sell the requested products. Indeed, such a selection is essential. Consequently, it is untenable to contend that the selection would not involve considering vendors who sell the requested products. Consequently, the filter condition of vendor merchandise falls clearly within the scope of the claim element in question.

As another consideration, the established rule of law is that the corresponding structure for a means-plus-function limitation is the structure "necessary to perform the claimed function." Asyst Tech., Inc. v Impak, Inc., 268 F.3d 1364, 1369-70 (Fed. Cir. 2001).

Though secondary to the above considerations, which are deemed to be controlling, a question might be raised with regard to Applicant's disclosure of "filter conditions" other than the merchandise of the vendor, e.g. merchandise code. In that regard, it is noteworthy that, as illustrated in FIGURE 9, the application discloses other "conditions of sale," specifically note the following: "Must be available delivered to Fullerton, CA by 12-18-93, 8:00am PST"; and "Minimum 10,000 units". It is established that an Applicant need not describe every possible example in the use of inventions Teleflex, Inc. v Fiaosa North American Corp., Fed. Cir. 1313, 1228 (Fed. Cir. 2002).

Respectfully, the above analysis clearly establishes Applicant's disclosure of support for the element "filter means" in claim 17. Specifically, the present application teaches a filter to determine recipients of a "request for proposal" based upon filter conditions (merchandise codes) set up by the buyer and in accordance with an organization of pre-established conditions (merchandise code addressing system).

In relation to the disclosure of Applicant's specification, a few cosmetic amendments are submitted, specifically on pages 6, 11, 12, 19, 24-25, 32-34, 37, 41 and 45. These changes are clearly obvious in view of the overall disclosure and do not constitute new matter. Specially, the term "filtering" has been introduced on the basis of the prior use of the selectivity operations. In particular, the language on page 24 has been supplemented to reflect the language appearing at page 45. Also, the significance of "information overload" has been relegated to its true secondary level.

Turning further to the office action and addressing the final rejections, at the outset, a few other comments are deemed to be appropriate. First, the enabling clause (35 U.S.C. § 112) specifies "any person skilled." That person is deemed to have knowledge of all the existing prior art. These legal considerations are considered to be important in resolving issues of enablement.

Apparently, enablement is virtually the single issue at the heart of all the rejections. Specifically, the question is whether or not the application discloses how "to determine which network members are to receive said request for proposal based upon filter conditions set up by the network buyer in said request for proposal or by the central processing unit in accordance with pre-established conditions" (Claim 17, 4th element).

Generally, explanations in the application of a buyer initiating operations to accomplish the selectivity appear at several locations in the specification. For example, such selectivity is treated specifically at the following locations:

<i>Page (present application)</i>	<i>Line</i>
6	8-9
7	1-2, 7
12	24
24	3, 7
33	3
38	5, 8-10, 16
41	18, 28 and continuing

Furthermore, disclosure of structure for a buyer to set up conditions and establish communication also are treated at several locations in the application, for example:

<i>Page (present application)</i>	<i>Line</i>
5	8

6	3
12	24-25
20	11
25	30-31
32	23
34	15

To treat the "filter means" element of claim 17, it is reproduced below for convenient reference with parenthetically designed numbers indicating specific portions, i.e., Portions 1-5.

"Filter means for filtering the network members in said storage means to determine (1) which network members are to receive said (2) request for proposal based upon (3) filter conditions set up by the network buyer in said (4) request for proposal or by the (5) central processing unit in accordance with pre-established conditions," (numerals and underlining added).

Treating the claim element portions in sequence, the initial portion "which network members" involves the selection of certain network members (vendors) as a result of selection or filtering operations. As mentioned above, the selection operation is mentioned at several locations in the specification. A few quotes may be helpful.

"The present system is configured to direct and exchange communication traffic, for example, in the form of offers and responses, between selective members of plural groups or sub-groups, such as vendors and buyers..." (page 6, line 6).

Functionally the operation is performed by the central traffic control system (TIS) (page 12, line 19); more specifically by the computer control and interface system 28, the selectivity logic 47 and the data storage 45 (Figure 2, see page 24, line 2 and continuing); or more specifically, in accordance with the merchandise codes (page 38, line 9) and in accordance with

the embodiment of Figure 5 involving the Unit P26, the control computer T16 and occasionally the Unit P28.

Next, the claim element specifies a "request for proposal." The exact term is used repeatedly in the specification, specifically, see page 38, line 28, and page 44, line 24. These sections refer specifically to the operation of the system TIS to accomplish the desired communication.

The claim element further specifies "filter conditions" identified by the numeral 3 above. The filter conditions are described above. Specifically, the filter conditions are described as being set up by using the form of Figure 9. In that regard, the paragraph beginning at page 38, line 7, highlights the operation. It is noteworthy that the paragraph not only sets forth the function of merchandise codes for "selectively identifying potentially interested vendors," but additionally sets forth other conditions that might be used, specifically, business designations as "supermarkets, department stores, drug stores and so on."

The claim element portion 4 repeats the "request for proposal" in association with the prior occurrence of the term. Of course, the operation is precisely in accordance with Applicant's description. That is, a "request for proposal" is received and selectivity is set up in accordance with the "request for proposal."

The final portion 5 of the claim element is the central processing unit which performs in accordance with the "conditions." The central processing unit constitutes the central traffic control system (TIS), (Figure 1) as shown in greater detail in Figure 2 and in still greater detail in Figure 5. The "pre-established conditions" are stored in the data storage 45 (Figure 2) or more specifically, in the buyer-vendor merchandise code storage unit T26 (Figure 5).

In summary, with descriptions directed to the structures of Figures 1, 2 and 5, the specification explicitly describes selectivity of "network members" with respect to a "request for proposal" and the "conditions" therein, which selectivity is performed by a central computing capability. The conditions that are explicitly described include merchandise codes, vendor types, product availability, etc. Respectfully, the claim element "filter means" is completely supported in the specification as detailed above. Reconsideration is respectfully requested.

With regard to the complete detail of selecting individual vendors, the specification relies on the knowledge of one skilled in the art (encompassing all the prior art) to execute simple comparative analyses as by the use of merchandise codes created herein. It is noteworthy that the '328 patent is less detailed in describing the so-called "filtering" or selecting process, see '328 patent at col. 2, line 63; col. 3, line 15; col. 5, lines 9-36.

While the '328 patent simply relies upon "filtering" as the basis for accomplishing the selective operation, Applicant's specification details merchandise codes with numerical designations to enable computer addressing. Respectfully, Applicant's disclosure carries greater detail for accomplishing the selection functions than does the '328 patent.

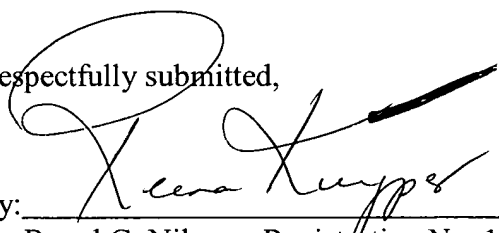
In one fashion or another, the rejections of the additional claims (18-34) are deemed to be based on the same basic criteria as the rejection of claim 17, i.e., lack of disclosure of the "filter means" and element. Respectfully, as the rejection is submitted to be traversed by the above analysis, repetitive detailed consideration of similar rejections is not deemed to be meritorious. Rather, application requests application of the above analysis to each of the claims and rejections asserted in the parent case. In that regard, the rejections under 35 U.S.C. 102 and 103 are deemed to be similarly treated. That is, the rejections were based on an assertion that the "filter means" and element was not supported. However, assertedly, the claim element is fully supported by the specification and accordingly, the rejections under 35 U.S.C. 102 and 103 are inappropriate. Reconsideration is respectfully requested.

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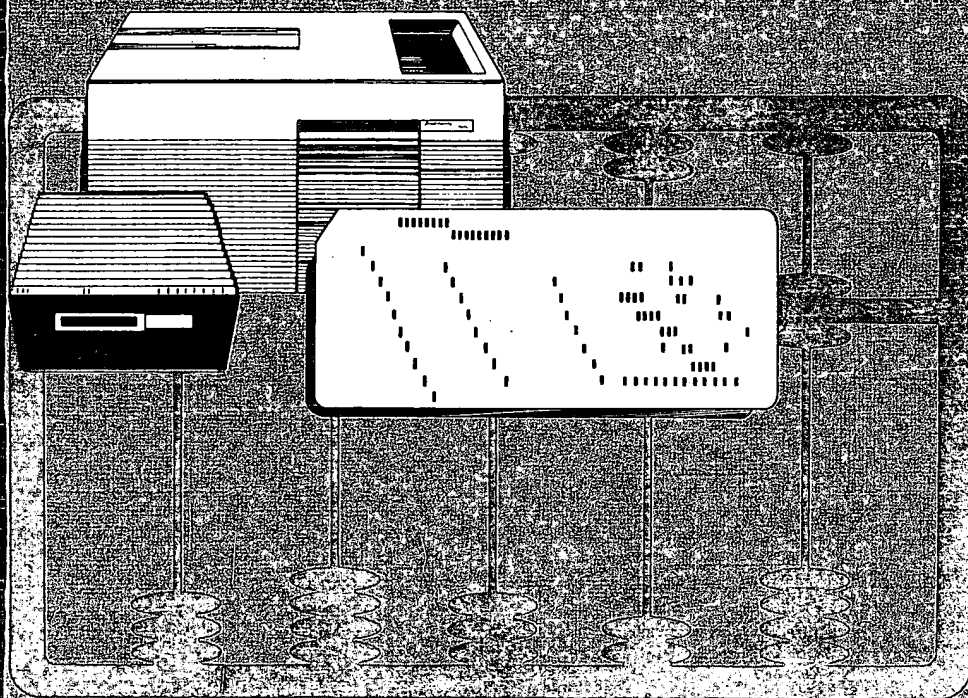
Respectfully submitted,

By:


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COMPUTER DICTIONARY AND HANDBOOK

By
Charles J. Sippl
&
Charles P. Sippl



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ble, easily updated
 : maintenance of the

or method that pre-
 of operative data on

file reconstruction procedures—The safe-
 guard procedure of protecting against the
 loss of data should the file be accidentally
 destroyed by a programmer or operator
 error, or by an equipment failure. Data
 must be dumped onto some media such as
 tape and programs for the reconstruction
 of the file.

file record compaction—See compaction of
 file records.

file reel—A magnetic tape reel which feeds
 toward the rewrite head and is also known
 as the supply reel.

files, batch transaction—Transactions ac-
 cumulated as a batch ready for processing
 against the master file.

files, disk—See disk files.

file security—The relative privacy or inac-
 cessibility of files from unauthorized users.
 As computers are used more and more fre-
 quently in the future as depositories of
 many kinds of information, file security
 will become an important legal issue.

file, sequential—A data file whose keyfields
 are arranged in a definite sequence. This is
 contrasted to a random file.

file, source—A CRAM deck or magnetic tape
 containing the file of information used as
 input to a computer run.

files, permanent data—See data files.

file spot, end of—An area on the used tape to
 signal the end of the file.

files, protected—Files in a computer system
 that are accessible only to a specific user.
 Since most files in a system are protected
 in this way, one user usually cannot obtain
 access to the information in another user's
 files.

files, security of user (time sharing)—See
 time sharing, security of user file.

files, shared—A direct-access device that per-
 mits two systems to be linked together.
 Either system has access to the file.

file storage—A special purpose storage of
 relatively large capacity, designed to hold a
 master file.

files, working data—See data files.

file, tape—1. A record file consisting of a
 magnetic or punched-paper tape. 2. A set of
 magnetic tapes in a tape library.

file, transaction—Transactions accumulated
 as a batch ready for processing against the
 master file.

file, tub—An open account file which pro-
 vides ready accessibility to punched cards
 or other computer storage documents.

file update, master program—See master
 program, file update.

file, user (time sharing)—See time sharing,
 user file.

file, variable-length record—A file contain-
 ing a set of records that vary in length.

file, volatile—A temporary or rapidly chang-
 ing program or file.

file, work—A CRAM deck or magnetic tape
 used as a buffer or for interim storage

within a run, such as a sort. The final file
 can be called the destination file.

filing system—An organization or set of plans
 developed to identify records for efficient
 retrieval. Filing systems may be sequential,
 alphabetical, numeric, or coded in various
 ways.

fill, character—See character, fill.

filler—In order to make some data process-
 ing items standard, such as a record, a
 filler is used as some portion of that item.
 Thus, the standard size is achieved and the
 filler is not an essential part of the data
 involved.

fill, memory—See memory fill.

fill, storage—The storing of characters in
 storage areas not used for data storage or the
 program for a particular machine run.

film—A base which usually contains a layer
 of magnetic material often less than one
 micron thick and used for logic or storage
 elements.

film, magnetic thin—A layer of magnetic
 material frequently used for logic or stor-
 age elements. Magnetic thin films are com-
 monly less than a micron in thickness.

film optical-sensing device—A piece of
 equipment capable of reading the contents
 of a film by optical methods; i.e., a system
 consisting of a light source, sensors, photo-
 cells and a film-moving mechanism. The
 output of the device is digitized and trans-
 ferred directly to an electronic computer. An
 example of such a device is the FOSDIC sys-
 tem developed jointly by the Bureau of
 Census and the National Bureau of Stand-
 ards.

filmorex system—A system, devised by
 Jacques Samain, for the electronic selection
 of microfilm cards. Each card has a micro-
 reproduction of the document or abstract
 and a field of twenty 5-digit code numbers
 giving the bibliographic reference and the
 subjects treated.

film reader—See reader, film.

film recorder—A mechanism that receives in-
 formation from a computer and records it
 in the form of opaque and transparent areas
 on photographic film.

filter—1. A pattern of characters that is used
 to control the selection or elimination of
 portions of another pattern of characters.
 2. A device or program that separates data,
 signal, or material in accordance with speci-
 fied criteria. 3. A machine word that speci-
 fies which parts of another machine word
 are to be operated on. Also called extractor
 or mask.

filter, digit—See digit filter.

finding—The operation which consists of
 identifying and then selecting. the operation
 begins when one object in a group is re-
 quested to be found. The selection termi-
 nates when the object is found.

fine index—A subsidiary or supplemental in-
 dex of a pair of indexes used to locate a



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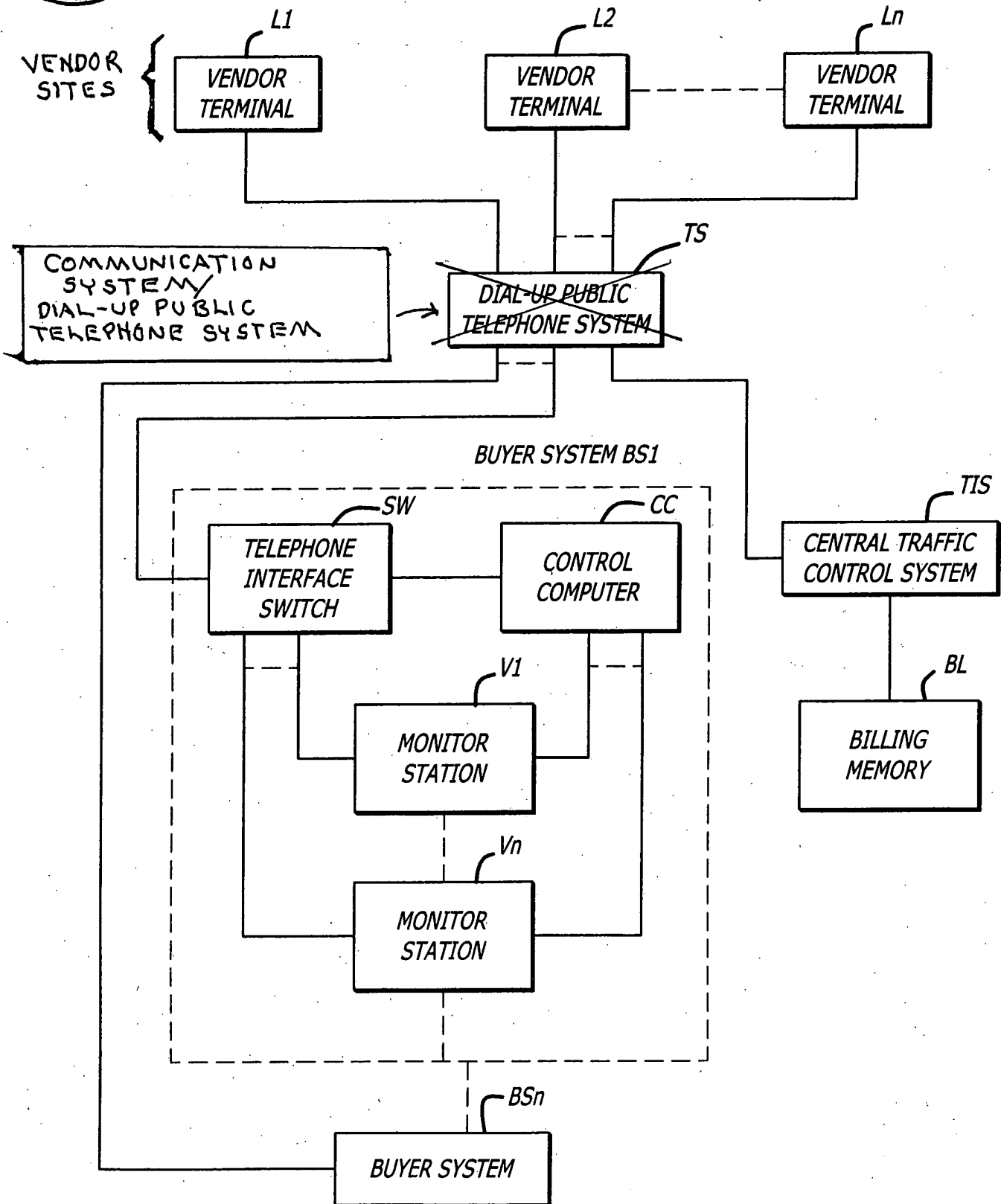
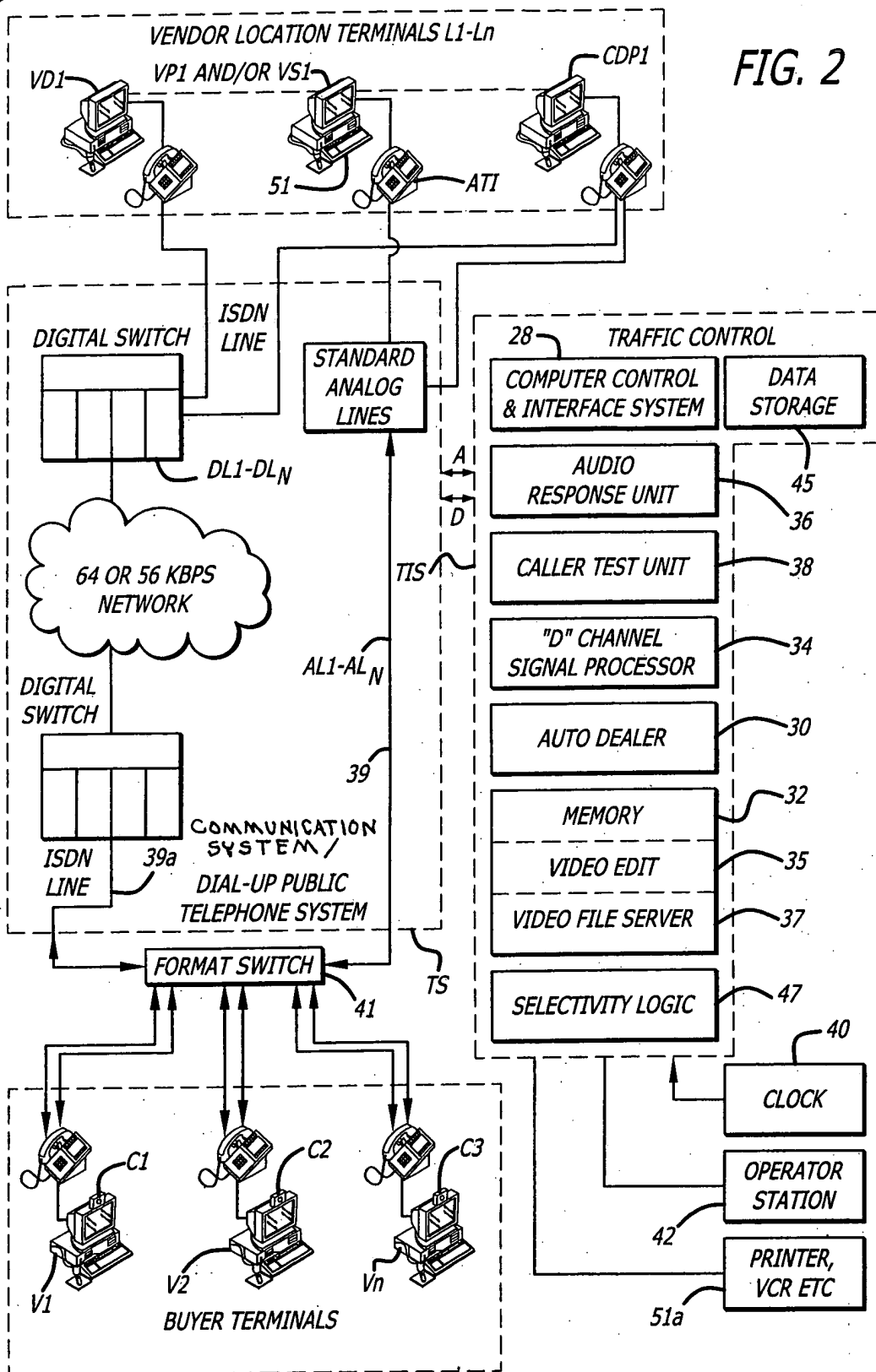


FIG. 1

FIG. 2





PATENTS

**METHOD AND APPARATUS FOR COMPUTERIZED
HANDLING OF PROPOSALS**

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation of co-pending application Serial No. 08/189,405, filed January 27, 1994, now pending. This application is a continuation-in-part of Application Serial No. 08/154,313, entitled "SCHEDULING AND PROCESSING SYSTEM FOR TELEPHONE VIDEO COMMUNICATION" and filed on November 17, 1993, which is a continuation-in-part application of Application Serial No. 08/067,783, entitled "VIDEOPHONE SYSTEM FOR SCRUTINY MONITORING WITH COMPUTER CONTROL" and filed on May 25, 1993, which is a continuation-in-part application of Application Serial No. 08/031,235, entitled "VIDEOPHONE SYSTEM FOR SCRUTINY MONITORING WITH COMPUTER CONTROL" and filed on March 12, 1993. The subject matter in all the above-identified co-pending and commonly owned applications is incorporated herein by reference.

FIELD OF THE INVENTION

[0002] The present invention relates generally to the field of computerized telephone and video communication, and more particularly, to a communication traffic control system for providing video communication through a dial-up telephone system, for selectively interfacing members of plural groups, for example, wholesale buyer groups and vendor groups. Such a system may be used in a variety of applications, such as for directing and exchanging offers and responses at the wholesale level, between selective members of plural groups, for analyzing and compiling data, scheduling and implementing conferences, consummating sales and the like. It is currently contemplated that the present invention may be used, for example, in merchandising applications, including purchasing, selling, marketing or the like, educational conventions for

1 medical doctors and other professionals, game shows, dating
2 services and so on.

3
4 BACKGROUND OF THE INVENTION

5 **[0003]** Over the years, integration of computer and telephone
6 technologies has brought many advances in the telecommunication
7 industry. Functionally integrating human operators with
8 telephone network capabilities, voice and data switching
9 capabilities, computer applications and databases, and voice
10 processing technology not only provides human operators with
11 immediate access to information from a wide variety of sources,
12 but allows them to intelligently process each call as well.
13 Telephone switches are linked with computers to coordinate
14 computer information and intelligence with call handling
15 capabilities to automatically add relevant data, as well as
16 facsimile, graphics, video or audio communication capabilities.
17 Select services or equipment such as automatic number
18 identification (ANI) or dialed number identification service
19 (DNIS) enhance calls and human capabilities by forwarding
20 identifying information preceding a telephone call, thereby,
21 eliminating steps otherwise performed by people to capture
22 information regarding the caller. For applications involving
23 large scale processing of calls, switch and host databases
24 automatically link calls with a caller's record, eliminating
25 the need for the caller to enter an identification number when
26 using a voice response system.

27 **[0004]** More revolutionary applications use ANI to
28 simultaneously pass both the call and the caller's current
29 record to an operator's telephone and terminal. This obviates
30 the need for a person to obtain, enter and receive the caller's
31 record from the database. Such advances have immensely
32 enhanced human capabilities for communication, data
33 manipulation and control functions.

34 **[0005]** Somewhat concurrently, rapid developments in
35 computer, telephone and video technologies have introduced the

1 concept of visual communications or video conferencing. In
2 particular, efforts at integrating these technologies have
3 gained enormous momentum in recent years, resulting, in part,
4 from a general desire in all industries to conserve time and
5 expenses, and thereby, maximize human efficiency and
6 productivity. The advent of videophones has enabled users to
7 visually communicate from remote locations. Many industries
8 are rapidly embracing the idea of video conferencing or visual
9 communication to eliminate escalating travel expenses.
10 Employees or customers in different places can take part in
11 interactive training sessions or seminars with no loss of time
12 for travel.

13 **[0006]** However, obstacles remain, particularly in
14 traditional areas of cumbersome communication. Still, with
15 developments, virtually every industry segment can profit from
16 interactive data sharing in real time with the added advantage
17 of face-to-face communication. Innovative technical advances
18 are fast satisfying promises of enhanced capabilities, thereby,
19 allowing users to share and manipulate images from remote
20 locations, such as pictures, graphs, maps or the like.

21 **[0007]** Technical breakthroughs in audio and video
22 compression technology make desktop video conferencing and
23 visual communication both economical and practical for everyday
24 business communications. To fully participate in video
25 conferencing, the user's equipment must communicate with
26 similar units, albeit, from different equipment vendors. The
27 International Telephone and Telegraph Consultative Committee
28 (CCITT) has defined a standard called H.261 (or "Px64")
29 detailing how video and audio signals are compressed and
30 decompressed for transmission across a common link. At
31 present, no one industry standard and format has been adopted
32 for video conferencing systems. Thus, the systems available on
33 the market are not always compatible. As a consequence, many
34 different types of video codecs (coders/decoders) are currently
35 in use. For example, the AT&T AVP CODEC is a three-chip set

1 that digitally processes high quality, full motion video images
2 and sounds that are compatible with the latest
3 videoconferencing standards.

4 **[0008]** At any rate, ongoing efforts at achieving
5 compatibility and providing compression schemes that can
6 transmit color images over POTS (plain old telephone system)
7 all over the world are in the offing. Approaches for
8 incorporating live-action, color video with standard voice
9 telephone lines via networks and modems are currently being
10 introduced. By using a suitable video capture board and a
11 modem, live video may be received and displayed on any 386 or
12 486 personal computer running Microsoft Windows™. The frame
13 rate depends upon the type of display and type of communication
14 hardware. For example, over a normal dial-up telephone line, a
15 computer with a VGA (video graphics array) display set at
16 32,000 colors, a 486 CPU and a 14.4 kbs (thousand bits per
17 second) modem can achieve a frame rate of 5 frames per second.

18 The link between the personal computers can be established in
19 several ways, for example, by a modem, LAN (local area
20 network), serial port and other high speed digital links.

21 **[0009]** To consider an example of cumbersome communication in
22 the merchandising industry, wholesale vendors or sellers of
23 goods typically spend many hours attempting to schedule
24 appointments with various buyers for different organizations,
25 travelling to and from the buyers' facilities, and waiting for
26 meetings, which may sometimes last only a short duration.
27 Unfortunately, considerably more time and expense is incurred,
28 in travelling to and from different facilities, than is
29 desirable. Moreover, as a practical matter, specific vendor
30 sales people are typically assigned to merchandise specific
31 goods and interact with specific buyers, resulting in a need
32 for more vendor personnel dedicated to particular buyers.

33 **[0010]** Moreover, in the event a specific seller wishes to
34 broadcast a special offering of a particular item to plural
35 buyers, for example, to dispose of an inventory of distressed

1 items, the seller must undertake considerable effort, such as
2 place an advertisement or otherwise initiate contact with
3 buyers. An advertisement is likely to be viewed only by random
4 buyers, thus, not always proving to be a reliable method of
5 soliciting offers from all possible buyers. Moreover,
6 initiating individual contact with a series of buyers, until
7 eventually securing a final sale, constitutes an arduous task.

8 Similarly, in situations where a buyer wishes to solicit
9 proposals from vendors for a particular item, the same practice
10 prevails.

11 **[0011]** Accordingly, the present invention recognizes the
12 need for a system to communicate with remote locations over a
13 widely distributed area, from other places, such as a central
14 location, for the applications discussed above as well as many
15 other diverse applications with similar requirements. In
16 particular, the present system recognizes the need for
17 directing and exchanging communications, such as offers and
18 responses, between select members of plural groups or sub-
19 groups, analyzing and compiling data relating to such members,
20 scheduling appointments, implementing face-to-face conferences
21 (in real-time), and consummating transactions and billing
22 relating to transactions between such groups.

23 24 SUMMARY OF THE INVENTION

25 **[0012]** Generally, the system of the present invention
26 involves traffic regulation and control for video communication
27 between a plurality of remote, widely distributed locations,
28 from a central unit, utilizing dial-up telephone facilities in
29 today's computer environment, and with voice quality lines.
30 Specifically, for example the dynamic graphics of telephonic
31 video (on standard analog lines and digital lines over
32 Integrated Services Digital Network (ISDN)) facilitate
33 videophone, while video still displays and digital lines
34 facilitate high fidelity (hi-fi) video displays along with
35 audio capabilities, all combined with the interactive

1 capability of computers to attain an effective commercial
2 product routing system with video vending capability.

3 **[0013]** The system of the present invention contemplates
4 applications ranging from merchandising (including purchasing,
5 selling, marketing or the like) to educational conventions for
6 medical doctors and other professionals, game shows, dating
7 services and so on. The present system is configured to direct
8 and exchange communication traffic, for example, in the form of
9 offers and responses, between selective members of plural
10 groups or sub-groups, such as vendors and buyers, for analyzing
11 and compiling data, scheduling appointments and implementing
12 visual conferences, consummating transactions and the like.
13 Selective routing of communication traffic from a central unit
14 or controlled by the central unit **[effectively prevents] also**
15 **avoids** information overload.

16 **[0014]** In one disclosed embodiment of the present invention,
17 personal computers equipped with capabilities for providing
18 either analog video (analog motion and analog high resolution
19 freeze frame) or digital video or both, and speakerphones (or
20 regular telephone instruments), for one-way or two-way
21 communication are placed at each of a plurality of remote
22 locations to communicate with a central unit that may include
23 several communication and control stations also equipped with
24 some or all of the same capabilities. As a part of traffic
25 control operations, a video display (depicting motion and
26 color) may be provided with graphics, audio and data signals,
27 at each communication and control station, as well as, the
28 remote locations. The personal computers may utilize well
29 known image enhancement techniques to facilitate high
30 resolution images for closer observation.

31 **[0015]** In accordance with one exemplary embodiment related
32 to wholesale merchandising, a telephonic interface appointment
33 scheduling and routing system includes a central traffic
34 control system, independently managed by a third party and
35 located remote from all vendors' and buyers' facilities. The

1 central traffic control system schedules appointments and
2 routes offers and responses to and from select members of
3 plural groups, such as buyers and vendors, to expedite
4 traditionally complex purchasing operations. Routing of offers
5 and responses may also take place between members of sub-groups
6 of plural groups. Calls may be classified into types, for
7 example, a vendor with a special offering, a buyer responding
8 to a special offering, a buyer soliciting proposals, a vendor
9 responding with a proposal and a vendor or a buyer seeking an
10 appointment. Calls of the various types may involve some form
11 of qualification or approval. For example, access to the
12 system may be limited to qualified or registered entities.
13 Also, certain limitations may be imposed, such as calls
14 revealing one vendor's proposal to a competitor are inhibited.

15 **[0016]** In accordance with an example, a vendor may wish to
16 broadcast a special offering of a particular item to interested
17 buyers. The routing system analyzes buyer data, typically
18 acquired during registration, and compiles a list of buyers to
19 whom the broadcast is transmitted. Special buyers may be
20 specified by the vendors making the special offering. For
21 example, a vendor may designate special buyers from a list of
22 all participating buyers and vendors provided to each
23 registered member. From time to time, periodic updates on new
24 members may be circulated.

25 **[0017]** To facilitate equitable routing of special offerings
26 to all interested buyers, in situations, where there are only a
27 limited number of communication lines, the routing system may
28 include a random number generator to randomly select subsets of
29 buyers and may transmit the broadcast in sequence to each
30 subset. In some situations, the routing system may have the
31 capability to request and add additional communication lines in
32 the event a caller (vendor or buyer) desires concurrent
33 broadcast to all potential receiving parties. Of course, in
34 such cases the caller would incur the additional charges. A
35 numbering system may also be adopted, whereby broadcasts are

1 transmitted to subsets of a designated number of buyers (for
2 example, equal to the number of communication lines) in
3 rotating sequence. For example, a particular special offering
4 may be broadcast first to subset number one, then subset number
5 two and so on, while the next special offering may be broadcast
6 first to subset number two, then subset number three and so on.

7 **[0018]** A video recording of the offered item may be stored
8 in a video file server at the central location, thus, allowing
9 interested buyers to view the item prior to making a purchase.

10 Likewise, buyers may wish to solicit proposals for a
11 particular item from vendors qualified for designated
12 merchandise. Communication between the routing system and the
13 different buyers and vendors may be accomplished in a variety
14 of ways, as for example, by electronic-mail (transmission of
15 messages across a network between two desktop PCs), electronic
16 bulletin boards, on-line computer services (such as Prodigy® or
17 CompuServe®), facsimile, voice-mail or the like.

18 **[0019]** Vendors and buyers may directly communicate with the
19 central traffic control system to seek or change appointments
20 and update information with respect to appointments with
21 specific buyers. In accordance with one scenario, vendors may
22 call the central traffic control system and, upon
23 qualification, schedule appointments with specific buyers.

24 **[0020]** Appointments may be executed, on command, from a
25 buyer location or the central traffic control system.
26 Communication may be initiated conforming to the display
27 capabilities at the vendor site. That is, as disclosed, the
28 central traffic control system or alternatively, plural
29 coordinated such systems (located at one site or plural sites),
30 as well as, the buyer locations, incorporate multiple video
31 format capabilities along with a bridge or switch unit to drive
32 a display unit or monitor in a selected format in accordance
33 with the capabilities of the current vendor. As disclosed, a
34 single monitor may accommodate several formats or plural
35 monitors can operate selectively for concurrent multiple

1 displays.

2 **[0021]** A sequence of scheduled appointments may be
3 developed, as programmed along with intervals of video
4 communication. A record of the scheduled appointments is
5 maintained by the central traffic control system.

6 **[0022]** At the appropriate times, identification designations
7 for remote locations are provided in sequence, to address a
8 memory for fetching telephone numbers and/or graphic display
9 data also recorded when the appointments are scheduled.
10 Accordingly, in sequence, vendor locations are dialed up via
11 the public telephone system, either manually or automatically,
12 to obtain audio-video communication providing an image of the
13 vendor and the surrounding area at a specific vendor location.

14 **[0023]** Additionally, data associated with a vendor (or a
15 buyer) may be graphically displayed for convenient reference.
16 For each scene display with respect to a specific vendor, the
17 graphic display of pertinent data provided may, for example,
18 indicate the telephone number, the PIN number, the video
19 format, vendor rating, current vendor delivery status and so
20 on.

21 **[0024]** Special controls such as a mouse may be instituted
22 enabling manifestations at the vendor location to initiate
23 action or alter the display. Special operations also may be
24 commanded through the videophone, video still (high quality) or
25 high fidelity (hi-fi) video means either on manual initiative
26 or automatically by automatic apparatus.

27 **[0025]** A video recorder and/or video printer may be located
28 at a remote vendor location, central traffic control station or
29 buyer location for selectively or continuously obtaining a
30 video recording or video printout of displays.

31 **[0026]** Multiple coordinated central traffic control stations
32 may be employed to communicate with widely distributed vendor
33 or buyer locations with capabilities to route calls to each
34 other, in the event that all of the communication lines are

1 occupied and there is a considerable backlog of calls. Calls
2 may be routed to the next available operator (buyer), for
3 example, in the event appointments scheduled for a particular
4 buyer last longer than contemplated, or another buyer familiar
5 with that line of products may step in and handle the
6 appointment.

7 **[0027]** Under some circumstances it may be desirable to
8 prioritize calls. For example, appointments may be queued in
9 sequence, specific appointments may precede other routed
10 appointments in accordance with an override feature.

11 **[0028]** A record of the number of calls and related charges
12 incurred by the buyers for appointments is maintained, which
13 may be analyzed and ultimately rebilled to the vendors. Of
14 course, charges for scheduling are incurred directly by the
15 vendors. Also, a record of charges incurred for each caller
16 (buyer or vendor), depending upon the transaction initiated,
17 may be maintained and billed to each caller.

18 **[0029]** These as well as other features of the present system
19 will become apparent from the detailed description which
20 follows, considered together with the appended drawings.

21 22 BRIEF DESCRIPTION OF THE DRAWINGS

23 **[0030]** A complete understanding of the invention and its
24 advantages may be gained from consideration of the following
25 description of some disclosed embodiments taken in conjunction
26 with the accompanying drawings, in which:

27 **[0031]** FIGURE 1 is a block diagram of the system in
28 accordance with one embodiment, illustrating a telephonic
29 interface appointment scheduling and routing system;

30 **[0032]** FIGURE 2 is a more detailed block and pictorial
31 diagram of the system of FIGURE 1, illustrating the basic
32 components of the scheduling and routing system;

33 **[0033]** FIGURE 3 is a graphic representation of a portion of
34 the control panel of an element in the system of FIGURE 2;

1 [0034] FIGURE 4 is an exemplary format of an identification
2 card issued by the scheduling and routing system;

3 [0035] FIGURE 5 is a more detailed block diagram
4 illustrating a form of the [central] traffic control system of
5 the [scheduling and routing] system of FIGURE 2;

6 [0036] FIGURE 6 is a logic flow diagram illustrating an
7 exemplary operation format of the system of FIGURE 5 for
8 automated qualification of callers, such as vendors or buyers;

9 [0037] FIGURE 7 is a fragmentary diagrammatic representation
10 of an exemplary storage cell for information specific to a
11 vendor, as may be formatted in the system of the present
12 invention;

13 [0038] FIGURE 8 is a fragmentary diagrammatic representation
14 of an exemplary storage cell for information specific to a
15 buyer, as may be formatted in the system of the present
16 invention;

17 [0039] FIGURE 9 is an exemplary form indicating a buyer's
18 request;

19 [0040] FIGURE 10 is an exemplary message transmitted from
20 the central traffic station to a buyer or a vendor.

21
22 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

23 [0041] As indicated above, a significant aspect of the
24 scheduling and routing system of the present invention is based
25 on recognizing that a dial-up public telephone system may be
26 effectively utilized for visual communication and conferences
27 between a plurality of remote locations regulated and
28 controlled by a central traffic control station. More
29 specifically, it has been recognized that for an effective
30 communication traffic control system, dial-up voice quality
31 lines, such as standard analog or digital lines, may be
32 employed variously in conjunction with videophone equipment,
33 computer facilities (personal computers (PCs) with video
34 capabilities) and various forms of telephonic equipment as

1 voice generators, auto dialers and D-channel or in-band
2 signalling apparatus.
3 **[0042]** To that end, a dial-up public telephone system TS is
4 illustrated in FIGURE 1 (upper center) affording effective
5 communication between a plurality of remote locations, for
6 example, locations L1-Ln representing vendor sites, and at
7 least one central traffic control station TIS. For
8 merchandising applications, the remote specific vendor
9 locations communicate with the central traffic control station
10 TIS, which is located remote from the buyers' and vendors'
11 facilities.

12 **[0043]** As a buyer example, XYZ Drug Company (a large chain)
13 may employ individual merchandise buyers responsible for
14 purchasing specific categories or sub-categories of items. For
15 example, one buyer (person) may be responsible for purchasing
16 body treatment products, such as skin and hair products,
17 another buyer may be responsible for purchasing vitamins and
18 over the counter medications, and yet another for purchasing
19 magazines and toys, and so on. **[The] As disclosed in detail**
20 **below, on the basis of data, including merchandise codes, the**
21 present system facilitates selective transmission of
22 communications between individual buyers of plural buyer groups
23 or sub-groups and qualified members of plural vendor groups or
24 sub-groups. For example, special offerings by vendors for
25 particular merchandise may be transmitted only to buyers
26 designated for purchase of the merchandise. Likewise, **for**
27 **example, on the basis of merchandise codes as disclosed below,**
28 buyer requests for proposals on select merchandise are
29 **selectively** transmitted only to vendors designated to sell the
30 merchandise. Similarly, appointments for conferences may be
31 scheduled by vendors or buyers, although in keeping with
32 present merchandising practices, it is generally contemplated
33 that vendors would pursue scheduled appointments. However,
34 appointments are generally verified by buyers and appointment
35 execution calls are generally initiated by buyers, either

To check

OK

→ Call for
89/10/12

1 directly or automatically using autodialers.

2 **[0044]** A fully automated interactive voice response system
3 including ARUs (audio response units) may schedule appointments
4 for specific buyers and subsequently, load schedules for all
5 the buyers into a memory at the central traffic control
6 station. Alternatively, each specific buyer's schedule may be
7 transmitted to and loaded into a memory at each buyer terminal.

8 In some instances, vendors may communicate with the traffic
9 control station in any of a variety of ways (touch-tone,
10 electronic-mail, voice-mail, facsimile or the like) to make
11 and/or verify appointments and/or initiate the conferences, if
12 necessary. In addition, buyers may also communicate with the
13 traffic control system to approve appointments, or otherwise
14 update information in any of a variety of ways (touch-tone,
15 electronic-mail, voice-mail, facsimile or the like). During
16 visual conferences (in real-time), vendors may display their
17 goods, packaging or promotional displays and otherwise
18 effectively communicate with the buyers.

19 **[0045]** Along with a video signal display (real-time, color,
20 motion, freeze frame), under manual or computer control, audio
21 and data signals are employed to supplement and enhance
22 conferencing operations. In an exemplary system, each of the
23 vendor locations may incorporate several video speakerphones
24 (with one-way and two-way communication and echo canceling), a
25 camera (separate cameras also may be used to concurrently
26 provide images for a videophone and high quality still images),
27 switches, automatic dialing devices and computer memory
28 capability for initiating and responding to commands from the
29 central traffic control system, as well as, for initiating
30 various actions to accomplish change or to accommodate special
31 circumstances.

32 **[0046]** Conventionally, in merchandising applications, it is
33 appropriate for the vendors to incur communication expenses.
34 To facilitate this, a reduced rate service for long distance
35 outbound calling, for example MEGACOM, may be installed at each

1 of the buyers' facilities. Data on calls made by the buyers
2 may be obtained from the telephone company (e.g., AT&T
3 telephone company) and analyzed to isolate calls made to each
4 specific vendor and thus, the cumulative charges incurred may
5 be computed. For example, outgoing call activity may be
6 monitored at each of the buyers' facilities or the
7 independently managed, central traffic control site and
8 rebilled to specific vendors.

9 **[0047]** Alternatively, toll free or "800" services at each of
10 the vendor locations may be installed, and "800" number calls
11 initiated by the buyers may be billed to each of the vendor
12 locations. Further, the central traffic control system may
13 include a central detail service to contract for and install
14 telephone services at both the buyer and vendor locations, in
15 order to obtain and report on calls to and from the buyers, as
16 well as, centrally bill both buyers and vendors for all video
17 telephone communications.

18 **[0048]** Considerable other data may be developed and stored.
19 For example, the central traffic control station for each
20 buyer facility may maintain a record of outbound calls made by
21 all the buyers located at that facility including data, such as
22 the date and time of the call, the name of the buyer initiating
23 the call and the duration of the call. Accordingly,
24 information for each buyer may be subsequently compiled.
25 Likewise, the central traffic control station may maintain a
26 record of all the calls made by each vendor. For example, a
27 specific organization may wish to ascertain the number of
28 vendor calls to a particular buyer. Accordingly, the central
29 traffic control station may compile such data by comparing
30 vendor outbound calls with a database of buyers (including
31 information, such as telephone numbers, names etc.).

32 **[0049]** Furthermore, in some cases, a summary of each buyer's
33 efficiency may be recorded and provided to interested parties.
34 For example, a buyer's efficiency may be ascertained by the
35 number of video calls made by a specific buyer every week, the

1 average length of the video call, and other data displayed from
2 the database, namely, name of the vendor, names of the persons
3 participating in the call, and so on. For example, for a
4 particular buyer a summary could indicate that during the week
5 of March 20, 1993, forty calls were made for an average length
6 of twenty minutes. Detailed information may further indicate
7 that specifically at 10:00 a.m., on March 20, 1993, a first
8 appointment with Mr. John Blow, of ABC Fruit Company was
9 initiated, which lasted for 1 hour and 12 minutes, and at 11:12
10 a.m., a second appointment with Ms. Mary Smith of XYZ Cutlery
11 Company lasted 11 minutes and so on.

12 **[0050]** The central traffic control station TIS may
13 automatically place a call (for example, to broadcast a
14 proposal request from a buyer) to the appropriate vendor
15 locations, determined by a database of vendor locations
16 qualified (for example, as by specific category or sub-
17 category) for the particular merchandise for which the buyer
18 requests proposals. Likewise, when executing appointments, the
19 buyer may place a call to the appropriate vendor location,
20 determined also by a database associated with the particular
21 one of the vendor locations L1-Ln, with which the specific
22 buyer has an appointment scheduled. Alternatively, the buyer
23 may actuate an autodialer, such that the autodialer code number
24 (obtained from the central traffic control station database)
25 displayed on the buyer's video terminal connects him or her to
26 the appropriate vendor. In the event there are complications
27 or otherwise, the buyer may use a regular telephone or a
28 cellular telephone and manually dial the telephone number
29 displayed on the video terminal. It is currently recognized
30 that cellular transmission will ultimately provide dynamic
31 motion and high resolutions freeze frame displays.

32 **[0051]** The illustrated embodiment of FIGURE 1 shows the
33 independently managed, central traffic control system TIS
34 (right), located remote from the buyer systems illustrated at
35 BS1-BSn and the vendor terminals L1-Ln. Under control of the

1 central traffic control system TIS, communication is provided
2 through a dial-up public telephone system TS, between the
3 vendor terminals L1-Ln and the buyer systems BS1-BSn. The
4 buyer system BS1 is shown in some detail, specifically, as
5 including a telephone interface switch SW coupled to a control
6 computer CC for regulating a plurality of monitor stations V1-
7 Vn.

8 **[0052]** Preliminarily, considering an exemplary sequence of
9 operations with reference to FIGURE 1, assume that different
10 vendor terminals L1-Ln are equipped with videophone, video
11 still (high quality) or hi-fi video capabilities.
12 Alternatively, the vendors may have desktop personal computers
13 incorporating live-action, color video with standard voice
14 telephone lines via networks and modems.

15 **[0053]** Each buyer system BS1-BSn may be equipped with a
16 platform to accommodate select communications with various
17 vendors. Assume that a person at vendor location L1 wishes to
18 schedule an appointment with a buyer at buyer terminal V1. As
19 a result, telephone equipment at the location L1 is actuated,
20 either manually or automatically, prompting dial-up operations
21 to accomplish a connection from the vendor location L1 through
22 the telephone system TS to the traffic control system TIS.
23 Standard information, as the specific buyer with which the
24 vendor may be entitled to schedule an appointment may be
25 indicated by dialed number identification signals (DNIS) using
26 a capability readily available from the telephone system TS, as
27 for example on the so-called D-channel. It is to be noted that
28 while the D-channel apparatus provides one operational
29 configuration, some DNIS and/or ANI (Automatic Number
30 Identification) data signals can be received in-band without D-
31 channel apparatus. In any event, such signals may direct or
32 qualify communication under control of the system TIS. It
33 should be noted that DNIS and ANI signals can be used for
34 identification, whereby the control computer CC may fetch
35 identification data for graphic displays.

1 **[0054]** As another feature, an incoming line can be
2 designated at the central traffic control system, such as an
3 "800" line to receive calls from any telephone (pay-phone,
4 vendor location or the like) to prompt scheduling. For
5 example, a call on the "800" line may be answered by an
6 interface or an operator to schedule an appointment with a
7 specific buyer or vendor. The vendor might be specified by ANI
8 signals when calling from a specific vendor location.
9 Accordingly, a vendor can simply call the designated number
10 from any telephone to enter the scheduling program.

11 **[0055]** For scheduling purposes, PIN numbers (personal
12 identification numbers) are assigned to vendors. The PIN
13 number may be coded to indicate the specific organization that
14 a vendor is associated with. Alternatively, a database of PIN
15 numbers correlating to specific organizations may provide that
16 information. Entry of a PIN number by a vendor may qualify a
17 vendor for contact with a select buyer. Initiating contact
18 also may be controlled by a clock, for example, some
19 communications might be limited to the hours between 7 a.m. and
20 12 p.m. Additionally, other specifications may be designated
21 for specific groups of vendors. Thus, the system may be
22 configured such that DNIS and ANI communication features cross
23 reference with the clock, prior to answering. For example, if
24 the present time is between 5 p.m. and 7 p.m., only select
25 vendor calls are accepted. Some vendors may be accorded
26 priority status allowing them to schedule appointments for
27 select priority days, for example, Thursdays. Similarly,
28 priority status may be accorded to vendors offering distressed
29 merchandise at discount rates.

30 **[0056]** As described in detail below, a priority field stored
31 in the vendor's cell VC (FIGURE 7) may incorporate a use-rate
32 component, whereby extent of use by vendors may be controlled.
33 That is, FIGURE 7 illustrates exemplary storage cells of the
34 traffic control system TIS, wherein information specific to
35 each vendor and buyer, such as the telephone number, graphic

1 data, merchandise codes, schedules and the like may be stored.

2 For example, a vendor cell VC may be accessed by the telephone
3 number and address to obtain information such as the vendor PIN
4 number, telephone number, video format and so on. In some
5 formats it may be desirable to designate a rating for each
6 vendor indicating dependability, efficiency at delivering,
7 credit worthiness, specific buyer organizations with which the
8 vendor is registered etc.

9 **[0057]** Furthermore, to indicate an established relationship,
10 a designation indicating priority may also be stored to isolate
11 a particular vendor from a plurality of vendors selling similar
12 goods. Of course, the vendor cell VC may also indicate the
13 vendor's name, any relevant personal information, the company's
14 name, other persons participating in a conference and so on.
15 Similarly, data relating to the last purchase may also be of
16 importance to some buyers.

17 **[0058]** With the central traffic control system TIS
18 interacting with a plurality of widely distributed vendors and
19 buyers, a cross reference number identifying transactions with
20 other buyers may be of importance. Moreover, a record of the
21 buyers available and the time limit for each buyer is also
22 recorded. Similarly, the priority designation or status
23 accorded to a vendor for any of a myriad of reasons may
24 indicate, for example, that a particular vendor has distressed
25 merchandise for sale at discount rates. Also, vendors that are
26 not registered may be able to obtain appointments with buyers
27 or buyers' assistants for predefined short periods of time, for
28 example, five minutes.

29 **[0059]** To ensure effective and proper directing and exchange
30 of traffic, for example, special offers by vendors and
31 responses thereto by buyers, requests for proposals from buyers
32 and responses thereto by vendors, or the like, merchandise
33 codes that apply to each wholesale vendor and wholesale buyer
34 are recorded. The merchandise codes, discussed in more detail
35 below, regulate communication and avoid information overload,

1
2 as by providing an indication of the type of products that each
3 particular vendor or buyer is authorized to sell or buy.

4 **[0060]** It should be recognized that appointment schedules
5 also stored in vendor and buyer cells VC and BC (Figures 7 and
6 8), respectively, may be revised and updated on site by the
7 traffic filtering control system. For example, considering a
8 situation where a last minute cancellation or change with
9 respect to a schedule, special offering, request for proposal
10 or proposal is necessary, changes, cancellations or updates to
11 any of these transactions may be requested remotely by vendors
12 and buyers alike. Moreover, vendors or buyers may wish to add
13 pertinent information during visual conferences (real-time)
14 simply for storage in the cells VC and BC or otherwise for
15 subsequent processing.

16 **[0061]** To recap, under control of the traffic control system
17 TIS, the dial-up public telephone system TS affords effective
18 communication between the remote locations L1-Ln and the buyer
19 systems BS1-BSn. Each buyer system located at a buyer's
20 facility includes a telephone switch SW, through which incoming
21 calls are received and outgoing calls are placed. Incoming
22 data signals (DNIS and ANI) are passed to the internal control
23 computer CC to select an appropriate one of the terminals V1-Vn
24 to handle the call. For example, a station V1 might be
25 assigned to buyer Tom Jones at XYZ Drug company, responsible
26 for purchasing vitamins and over the counter medications. In
27 addition, the computer CC also provides computer graphic
28 signals to monitor station V1 supplementing the coupled
29 television display, for example, to provide a composite display
30 of a scene at location L1 along with appropriate graphic data.

31 **[0062]** To consider the operation of the total-system
32 embodiment in somewhat greater detail, reference will now be
33 made to FIGURE 2 in which previously identified components bear
34 similar reference numbers. Preliminarily, it should also be
35 recognized that certain basic components illustrated only at
the central traffic control site TIS, such as memory, data

1 storage, auto dialers, printers, VCRs etc., obviously may also
2 be found at the buyer sites.

3 **[0063]** In the illustrated embodiment, the central traffic
4 control system TIS directs and exchanges on-line and off-line
5 traffic between the vendor and buyer sites, in the form of
6 special offerings, proposals etc., as well as accepting
7 appointment requests from either the vendor or the buyer sites.

8 Appointment requests are generally initiated from the vendor
9 locations L1-Ln. Subsequently, buyers initiate communication
10 with specific vendors in accordance with scheduled appointments
11 at the appropriate times.

12 **[0064]** The central traffic control system TIS may initiate
13 contact with the vendor locations L1-Ln or the buyer locations
14 V1-Vn (in predetermined sequence or randomly) to afford
15 communication with the designated vendor or buyer. For visual
16 conferences, buyers may initiate contact with the appropriate
17 vendor locations L1-Ln also in sequence, such as when
18 scheduled, or in some instances randomly.

19 **[0065]** As illustrated in FIGURE 2, different vendor
20 locations may have different communication capabilities, as
21 represented by terminals VP1, VS1 for analog telephone
22 communication capabilities over standard analog lines (static,
23 videophone or PC), terminal VD1 for digital video capabilities
24 over ISDN lines, and CDP1 for a combined terminal for analog
25 and digital communication capabilities. For illustration
26 purposes, FIGURE 2 shows one telephone (see CDPI) as exhibiting
27 both analog and digital communication capabilities.

28 **[0066]** The videophone terminal VP1 may be a unit available
29 from AT&T, such as the Videophone 2500, or one available from
30 MCI. A form of the digital video system VD1, for example, the
31 NCR PVS-70 system also is available from AT&T/NCR and is
32 recognized to provide high quality images. A static video
33 system VS1 may be AT&T's PICASSO™ still image phone, which
34 transmits "picture perfect" still color images and voice
35 simultaneously in just a matter of seconds. By pushing a

1 button on the PICASSO™ phone, a still image for a camcorder or
2 electronic camera may be captured and, by pushing another
3 button, that picture may be transmitted to another PICASSO™
4 phone. Such a video static system connects to standard analog
5 telephone lines and is compatible with a wide range of video
6 technology used in daily communication and industry standard
7 camcorders, electronic cameras, mouse devices, document
8 scanners and photo CD players. Accordingly, full-color images,
9 virtually of any type, size or dimension may be transmitted for
10 display on a TV, LCD panel, PC monitor or video monitor.
11 Images may be stored or printed using a PC interface.

12 **[0067]** FIGURE 2 also illustrates representative operator
13 (buyer) terminals V1-Vn, coupled to the traffic control system
14 TIS. Of course, all the operator terminals, as well as, the
15 central traffic control system may be compatibly configured.
16 Note that different videophone systems, rely on their own
17 proprietary codecs, sometimes with more than one as an option.
18 Generally, the operator terminals have the capability to
19 accommodate videophone operation along with telephone switching
20 and a variety of control functions.

21 **[0068]** The central traffic control system TIS includes a
22 computer control and interface system 28 coupled to several
23 operating devices including an auto dialer 30, a memory 32, a
24 "D" channel signal processor 34, an audio response unit (ARU)
25 36 and a caller test unit 38. These structures and their
26 interconnections are disclosed in greater detail below.

27 **[0069]** The computer control and interface system 28 also is
28 connected to a clock 40 and an operator station 42. The clock
29 40 may control scheduling operations as explained above. For
30 example, updates or changes to appointments, such as
31 cancellations, may be remotely implemented (for example, via
32 the central traffic control system) and forwarded to the
33 appropriate buyer in a variety of ways, such as facsimile,
34 electronic-mail, voice-mail or the like. The clock 40 may
35 likewise monitor time limitations, as when special offerings

1 and proposals are only valid for defined intervals of time.
2 **[0070]** With the live operator station 42, calls from vendors
3 seeking appointments, making special offerings, or
4 alternatively, calls from buyers seeking appointments or
5 proposals, may be transferred to a human operator, in the event
6 there are complications with the automatic response units or
7 message recording equipment or in the event callers are calling
8 from a rotary telephone. Some vendors or buyers may always
9 prefer telephone communication with a human operator at some
10 level.

11 **[0071]** As indicated above, flexibility to accommodate
12 various vendor equipment configurations is an important aspect
13 of the central traffic control system TIS and the operator
14 terminals V1-Vn. In that regard, it should be recognized that
15 even though only the buyer operator terminals V1-Vn are shown
16 coupled to a format switch 41 (lower center), the central
17 traffic control system TIS also has some form of a format
18 switch, shown as part of the video file server. The format
19 switch 41 selects a compatible one of analog video circuits and
20 static video circuits (on analog communication lines) and
21 digital video circuits (on digital communication lines) for
22 driving one or more monitors incorporating such specific
23 circuits. Each of the video monitors V1-Vn carry a camera C1-
24 Cn which may variously facilitate dynamic motion images and
25 still images. The format switch unit 41 can switch a single
26 analog line 39 (from analog lines AL1-ALn) to couple to either
27 videophone circuits or static video circuits or a digital line
28 (or lines from digital lines DL1-DLn) indicated at 39a to
29 couple to digital video circuits. Note that two lines are
30 typically required for digital video, one for audio and one for
31 digital data. Alternatively, the audio line may also serve as
32 the analog line.

33 **[0072]** A video recorder (VCR) also may be provided,
34 indicated generally at 51a, which may be set to record
35 continuously or intermittently, to provide historical data for

1 subsequent reference when conferring with a supervisor or
2 refreshing the memory with respect to specific features.
3 Alternatively, a video printer, also indicated at 51a, may be
4 used. On receiving a request command, for example from the
5 traffic control station TIS, the video recorder may record
6 compressed video signals of the display images. Of course,
7 continuous recording by the video recorder may be suspended
8 when desired.

9 **[0073]** At locations where more than one camera is
10 positioned, a single video recorder may be connected to the
11 multiple cameras via a switching device to control and sequence
12 the recordings from the cameras. A switching device such as
13 the intelligent sequential switcher manufactured by SONY, as
14 Model No. YS-S100, may be used to control and sequence multiple
15 recordings. In addition, plural video recorders, such as
16 separate video recorders for recording images transmitted on
17 digital or analog lines may be connected.

18 **[0074]** In some situations, select frozen frames of viewings
19 of vendor products or a specific time period of each viewing of
20 a vendor product may be recorded on a VCR or printed using a
21 video printer, for example two seconds (specific time period)
22 of a twenty minute appointment for each vendor location. Such
23 video printing may be obtained both by buyers and vendors.

24 **[0075]** Likewise, the operator terminal V1 (or the vendor
25 location or the central traffic control system), for example,
26 may incorporate a standard line printer for providing a printed
27 record of predetermined vendor communications, e.g., indicating
28 the date, time, location, period of appointment etc. Thus, a
29 detailed hard-copy record is available when desired.

30 **[0076]** The traffic control system TIS also includes within a
31 memory 32 or separate therefrom, a video EDI 35 for storing EDI
32 software (Electronic Data Interchange facilitating direct
33 computer-to-computer exchange of forms) or the like. It should
34 be recognized that the buyer terminals V1-Vn may also have EDI
35 software or the like stored in memory, by virtue of which, easy

1 access to and exchange of forms is facilitated. The traffic
2 control system TIS also includes a video file server 37, where
3 vendors and buyers may deposit a video recording of a product
4 being offered by a vendor or alternatively, desired by a buyer.

5 A block indicated at 45 and labeled "data storage" stores
6 standard system and network software. Selectivity logic, or ND
7 filtering structure to provide a select group is indicated at
8 47, (also) to prevent information overload selectively directs
9 communications between members of plural groups or sub-groups,
10 such as wholesale buyer and vendor groups. Operations relating
11 to the selectivity logic 47 are discussed below, specifically
12 with reference to FIGURE 6. As described in detail below,
13 merchandise codes identify buyers and vendors and the
14 selectivity logic 47 selectively directs communication, (as for
15 offers), requests or solicitations for proposals, and so on.

16 [0077] At this stage, consider an initial phase of a vendor
17 scheduling an appointment. In that regard, select vendors are
18 given advance notice of calling numbers and operating
19 instructions. Accordingly, consider an exemplary operation
20 sequence from the vendor telephone AT1 (FIGURE 2). Thus, the
21 vendor initiates dial-up operation with the central system TIS,
22 seeking to schedule an appointment with the specific buyer.
23 With a connection, a called number is indicated by Dialed
24 Number Identification Signals (DNIS) utilizing facilities
25 readily available and provided by the dial-up telephone system
26 TS through the so-called D-channel apparatus 34. Thus, the
27 central traffic control system has a basis for determining if,
28 by reason of dialing the called number, the vendor is entitled
29 to make an appointment with a specified buyer. A PIN number
30 entered by the vendor may also qualify a caller (vendor).

31 [0078] The dial-up telephone system TS also provides
32 Automatic Number Identification (ANI) signals indicating the
33 calling number on the so-called D-channel apparatus 34. In
34 various operational phases of the present disclosed embodiment,
35 such signals identify the remote vendor location L1 to the

1 central traffic control system TIS. Using such information,
2 the memory 32 may provide alternate forms of calling signals,
3 commanding a specific outgoing line from the telephone
4 interface and control unit 28 to afford additional
5 communication. Specifically, for example, ANI signals might
6 command various related data from the memory 32. Thus, an
7 appointment may be scheduled for execution at a later time as
8 explained in detail below.

9 **[0079]** As an alternative to simply scheduling an
10 appointment, assume that the caller is located at the buyer
11 terminal VP1 and wishes to initiate video contact with a
12 specific buyer. Upon attaining communication, the call may be
13 processed, for example, directly to the buyer terminal V1, at
14 which appropriate videophone communication is provided with the
15 vendor. In that regard, video monitors at the terminals V1-Vn
16 may be compatible to receive videophone signals through the
17 dial-up telephone system TS and the interface system 28 of the
18 traffic control system TIS.

19 **[0080]** Whether a conference is implemented as a result of a
20 direct call from a vendor, or as a result of a scheduled
21 appointment, in accordance with the present development, the
22 selected operator terminal V1-Vn (**[buyer] vendor** terminal) is
23 formatted to a configuration compatible with the connected
24 vendor terminal. In that regard, the terminal AT1 (vendor)
25 simply accommodates audio and digital signals and is
26 representative of such terminals for use to schedule
27 appointments, as in an ARU interface. Alternatively, person-
28 to-person communication is available through the operator
29 station 42.

30 **[0081]** The videophone terminal VP1 is representative of such
31 units to provide one form of audio/video communication with one
32 of the terminals V1-Vn. During such communication, the switch
33 41 is actuated to activate the videophone circuits to function
34 in cooperation with one of the monitors V1 or Vn. Thus,
35 compatible communication is implemented for each outgoing call,

1 utilizing data from the memory 32.

2 **[0082]** For communication with static video systems
3 (PICASSO™ units) as represented by the terminal VS1, the
4 switch 41 actuates the static video circuits for compatible
5 operation of a monitor V1 or Vn. Note that particularly
6 effective operations may involve combination formats, for
7 example, a videophone and a static video system (likely using a
8 single analog line). Specifically, with both of the
9 appropriate circuits operative, the camera and the monitor V1
10 may function in a videophone format to accommodate effective
11 personal communication between a buyer and a seller.
12 Concurrently, the camera and the monitor V1 may operate in a
13 static video format to effectively exhibit a vendor's product.
14 Additionally, a mouse 51 at the terminal VS1, controls a
15 cursor in the display of the monitor V1 further enhancing
16 interactive communication. A mouse, such as the one indicated
17 at 51 may also be provided at the buyer terminals V1-Vn.
18 Again, the switch 41 controls the operations to attain the
19 compatible format.

20 **[0083]** To further illustrate the possibilities, the terminal
21 VD1 is representative of high fidelity (hi-fi) telephonic video
22 systems using digital lines for higher resolution dynamic
23 displays. As with respect to the other formats, the switch 41
24 selectively actuates the compatible circuits, the digital video
25 circuits, to drive a selected combination of camera and
26 monitor.

27 **[0084]** It may be seen that the video platforms of terminals
28 V1-Vn offer considerable flexibility in accommodating multiple
29 audio-video formats. Convenience is served by the multiple
30 format capability of the camera along with the video monitor
31 V1-Vn.

32 **[0085]** Recapitulating, the terminal V1 has been described
33 for communication with the various equipments at locations to
34 include a video location for display. In addition to the
35 display, each of the terminals V1-Vn incorporates a handpiece

1 or equivalent, and a substantial control panel that may be in
2 the form of a telephone pad or embodied as part of a personal
3 computer keyboard. In any event, the control panel for each
4 terminal V1-Vn includes the current controls for an operative
5 video format, plus dedicated controls relating to the disclosed
6 system. In that regard, in the interest of avoiding undue
7 complications, only a fragment of the representative panel 80
8 for the terminal V1 is shown in FIGURE 4.

9 **[0086]** Generally the panel 80 affords considerable control,
10 including the use of keypad tone signals (DTMF) to perform
11 control operations at both ends of a communication.
12 Specifically, the fragment of the panel 80 of FIGURE 4
13 incorporates a traditional twelve-button telephone pad 82,
14 bearing the numerals "1" through "0" along with the symbols "*" and "#." The designated buttons each generate a distinct DTMF
15 signal in accordance with extensive practice, which signals are
16 communicated to all connected terminals.
17

18 **[0087]** Various other specific controls are provided on the
19 panel 80. An on-off button 84 controls outgoing audio. A
20 toggle 86 controls the volume of incoming audio. An on-off
21 switch 88 controls video at the terminal. A pair of toggle
22 switches 90 and 91, respectively, control zooming and panning
23 camera operations. A push button switch 93 serves as an
24 interrupt for locking onto the current display (high quality
25 freeze frame) for closer observation or to record data and in
26 some cases higher resolution images for closer observation at a
27 later time, for example, by use of a video printer. In
28 addition, another toggle switch 95 controls tilting camera
29 operations and a push button 97 advances the freeze frame for
30 subsequent observation or reverses it back to a dynamic
31 display. A push button switch 99 serves to manually terminate
32 the call. A control switch 101 regulates resolution of the
33 display. Finally a signal lamp 103 illuminates to indicate the
34 next appointment. Generally, by using the telephone keypad 82
35 on the panel 80, various control functions can be accomplished

1 as detailed in the parent patent applications identified herein
2 under the caption "CROSS REFERENCE TO RELATED APPLICATIONS" and
3 incorporated herein by reference.

4 **[0088]** One form of control involves video coordination. For
5 example, in accordance with a program, a conference might be
6 initiated in a videophone format with the terminal V1 (FIGURE
7 2). Accordingly, the videophone circuits are active to drive
8 the video monitor V1. At some point, assume the conference
9 participants decide to add a static video communication. A
10 command of "52" in touch tones on the pad 82 (see FIGURE 3)
11 initiates a series of operations. Specifically, another line
12 connection is established by actuating the autodialer 30
13 (FIGURE 2), then static video circuits are actuated. At the
14 terminal V1, the static video circuits are actuated to drive
15 the monitor V1 that may involve another monitor or split image
16 operation. Separate displays for dynamic and still video may
17 be used, such that a buyer at one monitor can confer with a
18 vendor, speaking face-to-face through the camera and that
19 monitor, while the vendor exhibits fine details of a product on
20 a second monitor in a still image. Of course, in sequences of
21 such still images, views can be changed and areas highlighted
22 with a cursor controlled by the mouse 51.

23 **[0089]** As an alternative to actuating the static video
24 format, the conferees may elect to go digital. A command "53"
25 from the panel 46 sets the requisite steps in motion. The
26 autodialer 30 dials up a digital connection, then using that
27 connection, the switch 41 actuates the digital video circuits
28 to drive one of the monitors V1-Vn. Note that with enhanced
29 hi-fi video communication, the assumed videophone communication
30 might best be terminated.

31 **[0090]** In view of these examples, it will be apparent that
32 the operator at the terminal V1 has substantial control,
33 including the ability to go from one video format to another.
34 Of course, such operations presume that the vendor has the
35 requisite capacity, which may be indicated in the graphic

1 display as treated in greater detail below.

2 [0091] From the above descriptions, it is apparent that the
3 disclosed system utilizes videophone technology in combination
4 with other telephone system technology along with computer
5 control and graphics technology to accomplish effective
6 scheduling and processing of traffic for visual conferences.

7 [0092] As explained above, the exemplary central traffic
8 control system TIS functions to initiate outgoing calls as well
9 as receive and process incoming calls. To resume with the
10 explanation of an incoming call from a vendor to schedule an
11 appointment, when the telephone interface 28 (FIGURE 2)
12 receives an incoming call, it may be connected to either the
13 operator station 42 or the audio response unit 36.
14 Concurrently, incoming data signals (DNIS and ANI) are provided
15 to the "D" channel processor 34 for control and/or information.
16 For example, from the memory 32, the control computer 28 may
17 fetch the identification of the vendor location L1 embracing
18 one or more of the terminals VD1, etc. With such signal
19 represented data, one or more buyers are identified with whom
20 the vendor or vendor organization is entitled to schedule an
21 appointment. However, to schedule an appointment, a vendor may
22 use virtually any form of telephone instrument or terminal
23 including any of the units AT1, VP1, VS1, VD1 or CDP1 as
24 illustrated in FIGURE 2. The unit AT1 is sufficient either for
25 a telephonic-computer interactive call or a direct operator
26 call (station 42) to schedule an appointment or the like.

27 [0093] Initially, as described above, inbound calls for a
28 buyer, initiated by vendors, may be received through the
29 interface system 28 (FIGURE 2, upper right) for scheduling
30 appointments or directly accommodated at a buyer location by
31 the interface telephone switch SW (FIGURE 1, center left)
32 including the format switch 41 for visual conferences. The
33 format switch 41 may incorporate a variable codec for analog
34 lines AL1-ALN and digital lines DL1-DLN. For analog lines, a
35 video CODEC along with computing capability may take the form

1 of an AVP1000 video CODEC chip set as available from AT&T.
2 Essentially, the CODEC chip set accomplishes videophone
3 operation and consists of a video encoder, a video decoder and
4 an internal system controller. The format switch unit 41 is
5 shown as coupled between a standard analog line and a line on
6 ISDN. Upon receiving a call from a videophone unit, the format
7 switch unit 41 selects the appropriate line, that is, the
8 analog line. Alternatively, upon receiving a call from a high
9 fidelity video (digital), the format switch unit 41 selects a
10 digital line. Also, as described above, during visual
11 communication (real-time), a buyer may make switches, e.g.,
12 from transmitting dynamic images over a single analog line to
13 high resolution freeze frames. The high resolution freeze
14 frames may be viewed on large 14 inch monitors. Further, the
15 images may be manipulated from either end, to view the freeze
16 frame image concurrently.

17 **[0094]** In the operation of the system embracing the
18 exemplary formats as treated above and below, a record is made
19 for billing purposes. That is, a billing memory unit BL
20 (FIGURE 1) and a standard printer (treated below) are
21 controlled by the computer control 28, recording all
22 transactions in relation to billing charges. Such data can be
23 variously processed at different times. Basically, the concept
24 involves formulating billing data, so that at least a part of
25 the calls made to a vendor, for example, can be rebilled to
26 that vendor.

27 **[0095]** Considering the dial-up telephone system TS (FIGURE
28 2) in somewhat greater detail, in arrangement, the inter-
29 exchange carrier (e.g., AT&T) provides comprehensive data on
30 calls specifying: phone number calling, phone number called,
31 date, time, length of call (period), billing data and so on.
32 Test or look-up operations are then performed with reference to
33 a vendor database. Accordingly, portions of the charges (with
34 or without mark-ups) are rebilled (with appropriate
35 identification to the vendors). Such operations may be

1 particularly effective in relation to "private" networks, e.g.,
2 the so-called SDN (software defined network), SDDN (software
3 defined data network) which are compatible with ISDN
4 operations, or a combination of the two service offerings (SDN
5 with SDDN). Note that AT&T's SDN is a virtual network service
6 which offers an organization the ability to build a private
7 corporate network within the AT&T public network. A customized
8 database contains information on various sites affiliated with
9 the organization (i.e., the service organization installs a
10 "private" network service at many different business entities)
11 as well as features and routing information. Moreover, SDN
12 encompasses voice, analog data, digital data and image
13 transfer. SDDN is a feature of SDN and is most often installed
14 in conjunction with SDN. A combination of the two provides the
15 capability of combining all the different sites for network
16 management and billing. Note that both buyers and vendors may
17 wish to extend the scope of the network of participants by
18 installing at least one similar mode of video in their
19 branches, plants and/or customers.

20 **[0096]** Essentially, coordinated with the control computer 28
21 in the system TIS, reapportioning and rebilling options are
22 executed by the billing data unit utilizing storage capacity of
23 the memory 32 or a separate billing data memory.

24 **[0097]** To this point, detailed consideration has been
25 primarily directed to the treatment of incoming calls to the
26 system TIS. However, as explained, certain modes involve the
27 placement of outgoing calls under either manual control or
28 automatic operation. Such operations next are treated in
29 detail.

30 **[0098]** As a result of control operations, to implement a
31 sequence of scheduled conferences, the computer control and
32 interface system 28 (FIGURE 2) at the central traffic control
33 site or the control computer CC at the buyer site (FIGURE 1)
34 may address, for example, the memory 32 to fetch the telephone
35 number for an outgoing call, e.g., a vendor location L1. The

1 telephone number is supplied from the memory 32 (or a memory at
2 the buyer location) to the control computer CC which actuates
3 an auto dialer, similar to auto dialer 30, to provide the dial-
4 up signals on an off-hook line provided to the dial-up
5 telephone system TS. Typically, at the vendor location L1, a
6 dedicated or other line for video operations will accept the
7 communication.

8 **[0099]** As an alternative to manual calls, the system may
9 operate under computer control to enable a sequence of
10 appointments. During the operation, the control computer CC
11 (FIGURE 1) fetches telephone numbers for remote locations from
12 the memory 32 (or a memory on site) in sequence, actuates the
13 auto dialer 34 accordingly, and assigns the resulting
14 connections as scheduled. After a session between a particular
15 buyer and vendor has concluded, the control computer CC
16 terminates the connection in favor of the next waiting
17 connection. A blinking light 103 (FIGURE 3) or alternatively,
18 a graphic display of "Five more minutes for the next
19 appointment" may be exhibited to the caller to indicate a next
20 appointment. The operation may result in sequential displays
21 that have been scheduled at the particular one of the terminals
22 V1-Vn.

23 **[0100]** Different selling and buying companies may be
24 registered with the central traffic control system TIS. At
25 registration, central traffic control system TIS may issue an
26 identification card with a check digit for qualification to
27 each representative of the selling or buying company (FIGURE
28 5). An exemplary identification card (embodied for display) is
29 indicated at 211. For example, assume that XYZ company has
30 four vendor representatives, all located at vendor location L1
31 equipped with analog capabilities only. Further assume that
32 the telephone number for that location is (212) 555-5555.
33 Accordingly, the traffic control system TIS may assign an
34 identification number and store the following information under
35 that identification number in memory: Jones, Roger, XYZ Toy

1 Company, Analog System, Telephone number (212) 555-5555,
2 Registered to interact with EFG Company (central station number
3 - (310) 666-6666), no priority, IJK Company (central station
4 number - (414) 777-7777), priority with buyer no. 3, Thursday
5 appointments may be offered to vendors with priority status.
6 At registration, each vendor and buyer fills out a subscription
7 form or otherwise provides the central traffic control system
8 with specific information, such as the nature of the
9 merchandise they are designated to sell or buy. This
10 information may be provided with reference to an established
11 list of merchandise codes. The designated merchandise codes
12 assist the selectivity logic 47 in making routing
13 determinations and to avoid information overload. Similarly,
14 vendors and buyers seeking appointments are qualified on the
15 basis of these merchandise codes and limited to making
16 appointments only with authorized persons.

17 **[0101]** To make an appointment, a special offering or a
18 proposal in response to a buyer request, the vendor may
19 initiate dial-up operations with the central traffic control
20 system TIS. For such calls, the ARU 36 may provide voice cues
21 to the vendor and prompt touch tone input of responses as
22 described above. A single ARU may be used for different
23 organizations, alternatively, different ARU's may be used for
24 different large organizations. The ARU's may include voice-
25 mail capabilities for individual buyers. After recording all
26 the information pertaining to a special offering or proposal,
27 the central traffic control system provides reservation or
28 identification numbers. For example, callers may be queried
29 via the ARU if calling to cancel an appointment or supplement a
30 special offering or proposal. If a call is merely to cancel an
31 appointment, the vendor would only need to enter the
32 appointment number. Likewise, if the call is simply to report
33 that a sale for a special offering has been consummated, the
34 vendor may only need to enter an identification number.

35 **[0102]** Note that live operators also may take information

1 from vendors and access the traffic control computer TIS to
2 enter appropriate request data processed similar to the
3 automatic features of the system in the event vendors are
4 calling from a rotary telephone or for other reasons.
5 Additionally, the live operators may transfer calls to an ARU
6 to enable vendors to leave voice-mail messages.

7 **[0103]** The traffic control system TIS may provide schedule
8 or other data to individual buyers via facsimile, either
9 automatically or upon request. Alternatively, schedule or
10 other data may be provided to individual buyers by downloading
11 data onto a computer at the buyer's location typically in batch
12 mode overnight. Recent changes to appointments or special
13 offerings and proposals may be displayed on the buyer's
14 terminal (real-time) or forwarded by electronic-mail.

15 **[0104]** At the central traffic control site, which may
16 service numerous business entities, several audio response
17 units (ARU) may be used in conjunction with several groups of
18 live operators. To accommodate large numbers of calls,
19 automatic call distributors (ACD) may be utilized to route
20 calls where the different business entities are identified by
21 DNIS.

22 **[0105]** It should be recognized that video recordings on
23 specific merchandise may be stored at the video file server 37
24 for viewing by buyers and sales may be consummated without any
25 visual conferences between vendors and buyers.

26 **[0106]** Also, it should be recognized that the buyer
27 terminals disclosed herein may be used by retailers to sell
28 products directly to the persons having units similar to the
29 vendor units described herein in their homes. In such a
30 scenario, ANI may be used to identify a particular household
31 calling, and DNIS may be used to identify a particular product
32 of interest.

33 **[0107]** As indicated above, the traffic control system TIS
34 incorporates structure for a wide variety of communications
35 through the dial-up telephone system TS. FIGURE 5 illustrates

1 a still more specific exemplary form of the system TIS. A
2 telephone interface T12 (upper left) accommodates a multitude
3 of line connections to the dial-up public telephone system TS
4 (FIGURES 1 and 2) accommodating two-way communication with
5 various capabilities as treated above.

6 [0108] The interface structure T12 (FIGURE 5) accommodates
7 the placement of outgoing calls by an auto dialer T14
8 controlled by a computer T16 incorporating substantial memory.

9 Auto dialers are well known in the telephone arts functioning
10 to place calls in response to digital instructions. As the
11 source of such digital instructions, along with others, the
12 control computer T16 comprises a substantial computing
13 capability, functioning to control telephonic traffic in
14 various communication forms through the telephone interface
15 structure T12. Traffic is controlled, both for servicing and
16 interconnecting remote terminals at both vendor and buyer
17 locations, e.g., buyer locations BS1-BSn (FIGURE 1) and vendor
18 terminals, e.g. terminals L1-Ln.

19 [0109] The control computer T16 also is connected to an
20 audio response unit T18 for vocally cuing and otherwise
21 interfacing remote stations through the telephone interface
22 structure T12. Again, various forms of audio response units
23 are well known in the telephonic arts for verbalizing cues,
24 receiving digital signals and performing some processing. In
25 that regard, the audio response unit T18 may incorporate some
26 dictionary capability or may rely on the control computer T16
27 for an extended dictionary of words to be vocalized.

28 [0110] The control computer T16 also is connected to receive
29 signals from the telephone interface structure T12 through a
30 "D" channel circuit T20. For example, the "D" channel circuit
31 receives ANI and DNIS signals indicative of calling and called
32 station numbers as explained above. Essentially, the "D"
33 channel circuit T20 provides call related information to the
34 control computer T16 in accordance with well known techniques
35 of the telephonic arts.

1 **[0111]** Recapitulating to some extent, it may be seen that
2 the control computer T16, along with the above-mentioned
3 structures, has substantial capability to interface with remote
4 terminals. However, under certain conditions, manual
5 communication also may be desired. Accordingly, as explained
6 above, an operator station T21 is coupled to the computer T16
7 to accommodate a human interface. The operator station T21 may
8 take the form of a CRT terminal with graphics display
9 capability and various controls (FIGURE 5) implemented through
10 the control computer T16.

11 **[0112]** As indicated above, to accomplish the traffic control
12 function, the computer T16 has substantial computing
13 capability, specifically, for purposes of control, storage
14 management, delivery, scheduling and interconnecting remote
15 stations. For convenience of explanation, in FIGURE 5, several
16 operating components that could be integrated in the computer
17 T16 are separately illustrated. Such separate illustration
18 also facilitates the operating explanations. Specifically,
19 separate storage capacity is illustrated in the form of a
20 buyer-vendor storage unit T24 and a buyer-vendor/merchandise
21 code storage unit T26. The storage units T24 and T26 are
22 addressed by the control computer T16 to provide data that is
23 processed along with other data to control and facilitate on-
24 line and off-line communications between buyer and vendor
25 terminals.

26 **[0113]** As suggested above, communication between the various
27 vendors and buyers involves substantial control and regulation
28 along with limitations, thus, the term traffic control is
29 deemed appropriate. In that regard, a qualification unit T28
30 is coupled both to the control computer T16 and the storage
31 units T24 and T26. Essentially, the qualification unit T28
32 receives identification and limitation data to qualify buyers
33 and vendors for select individual communications. The storage
34 unit T26 is coupled directly to the computer T16, along with a
35 billing data memory T30 and a printer T32 for operation as

1 mentioned above.

2 [0114] Summarizing the extensive treatment above, the
3 present system variously implements both online and offline
4 communication as between vendors and buyers. The communication
5 is considerably enhanced by video displays. Accordingly, a
6 video file server T34 is coupled directly to the telephone
7 interface structure T12 and to the control computer T16. A
8 monitor station T36 is similarly coupled, as for select time or
9 call monitoring.

10 [0115] In view of the preliminary description of the
11 structure (FIGURE 5) a comprehensive explanation of the system
12 now may be expressed by assuming particular situations and
13 describing typical operating sequences. Accordingly, assume
14 the structure of FIGURE 5 is coupled as the traffic control
15 system TIS in the system of FIGURE 2 for controlling and
16 regulating select communications between vendor and buyer
17 terminals. In that regard, a system of merchandise
18 classification is used to [enhance] enable the selectivity of
19 communication help to prevent information overload. Generally,
20 merchandise is classified in accordance with a decimal system,
21 somewhat equated to the channels of commerce for various goods.
22 For example, a component of such a classification is as
23 follows.

ab
=

24
25 CHART A

<u>Merchandise</u>		<u>Decimal Code</u>
Body Treatment		470000
Skin		471000
Sun Cream		47260
Prevent & Protect		471230
Water Resist		471234
Tanning		471235

1	Cream	471300
2	Moisture	471310
3	Cleansing	471320
4		
5		
6		
7	Hair	472000

10 **[0116]** In accordance with the exemplary classification,
 11 "body-treatment" merchandise carries the code "470000". More
 12 explicit classifications of such merchandise carry additional
 13 decimal indicators. For example, as indicated above, water-
 14 resistant, sun protection treatment would be identified by the
 15 code "471234". Accordingly, entire ranges of merchandise are
 16 classified and coded to control and regulate communication
 17 traffic in accordance herewith.

18 **[0117]** Generally, preliminary inquiries, offers for sale and
 19 requests for proposals all carry merchandise codes for
 20 selectively identifying potentially interested vendors or
 21 buyers. As a further element of classification, buyers or
 22 vendors also may be assigned specific codes, for example,
 23 designating a business primarily as, supermarkets, department
 24 stores, drug stores and so on.

25 **[0118]** As detailed below, the operation of the system will
 26 be treated as it regulates and controls video communication,
 27 for example, selectively between vendors and buyers, to
 28 expedite traditionally complex purchasing operations. In that
 29 regard, the embodiment treats six types of telephone calls.
 30 Specifically, primary calls are classified in accordance with
 31 the following chart.

32 CHART B

35	<u>Type Call</u>	<u>Nature</u>
36	"A"	Vendor with special offering
37	"B"	Buyer responding to special

1		offering
2	"C"	Buyer with Request for Proposal
3		(RFP)
4	"D"	Vendor responding to RFP
5	"E"	Vendor seeking appointment
6	"F"	Buyer seeking appointment

7

8 **[0119]** Typically, calls of the various types involve some
 9 form of qualification or approval. For example, access to the
 10 system typically will be limited to qualified or registered
 11 entities. Also, certain limitations will be imposed on such
 12 entities. For example, calls that would reveal one vendor's
 13 proposal to another vendor are inhibited. Also, it may be
 14 desirable to limit calls from buyers accessing information
 15 related to another buyer. Of course, specific forms of
 16 limitations and qualifications may be implemented depending
 17 upon specific applications. However, in accordance with the
 18 disclosed embodiment, the types of calls set out above, all
 19 involve some form of qualification. The qualifications are
 20 generally performed by the qualification unit T28 (FIGURE 5)
 21 utilizing information derived from a call correlated with
 22 reference data from the storage units T24 and T26. In that
 23 regard, the logic for the qualification unit T28 may be
 24 implemented in accordance with the flow diagram of FIGURE 6 as
 25 will now be considered.

26 **[0120]** In the disclosed embodiment, the qualifications for
 27 buyers and vendors are somewhat similar. Specifically, the
 28 tests for a calling vendor are:

29

30 Is the calling station registered as a vendor (or buyer)?

31 Can the caller give a proper PIN number (Identification

32 Number)?

33 Is the vendor qualified for the designated merchandise?

34 Is the vendor approved for an identified buyer or buyers?

35

1 **[0121]** The tests for calling a buyer are quite similar. To
2 consider the logic embodied in the qualification unit T28
3 (FIGURE 5), reference will now be made somewhat concurrently to
4 FIGURES 5 and 6. With the occurrence of an incoming call
5 through the telephone interface structure T12 (FIGURE 5), "D"
6 channel signals are supplied through the circuit T20 to the
7 control computer T16. As a result, the computer T16 addresses
8 the buyer-vendor storage unit T24, using the call number of the
9 originating terminal (ANI). Of course, in other applications
10 DNIS signals may be similarly employed. The operation is
11 illustrated by a block T40 (FIGURE 6). Addressed by the
12 calling number, the storage unit T24 (FIGURE 5) supplies
13 representative signals indicating: first, that the calling
14 terminal does belong to a registered buyer or seller, whether
15 the entity is a buyer or a seller, and the identification
16 number (PIN) for the entity. The operation of consulting the
17 storage unit T24 or look-up table is illustrated by a query
18 block T42 in FIGURE 6.

19 **[0122]** If the calling terminal number is not located,
20 indicating an unregistered caller, the qualification unit T28
21 (FIGURE 5) actuates the computer T16 for appropriate control.
22 Specifically, the audio response unit T18 may be prompted to
23 provide a termination message or the operator station T21 may
24 be actuated for a human interface. Such alternatives are
25 represented in FIGURE 7 by the block T44.

26 **[0123]** For calls originating from a registered terminal, the
27 qualification unit T28 (FIGURE 5) stores the pertinent data,
28 i.e., buyer or seller and reference PIN. The operation is
29 illustrated in FIGURE 7 by the block T46.

30 **[0124]** With the determination of a properly registered
31 calling terminal, the computer T16 actuates the audio response
32 unit T18 providing a verbal cue for an identification number
33 (PIN). The operation is illustrated in FIGURE 7 by the query
34 block T48. If the caller enters keypad digital information
35 indicating an invalid PIN, or makes no entry at all, the

1 operation again proceeds to the block T44 for termination or
2 transfer of the call as explained above. With the entry of a
3 valid PIN, the operation proceeds to store the personal
4 identification number as indicated by a block T50.

5 **[0125]** The qualification unit T28 (FIGURE 5) next functions
6 in cooperation with the computer T16 driving the audio response
7 unit T18 to cue the caller for the type of call and the
8 merchandise code, see blocks T52 and T54 (FIGURE 6)

9 representing such operations. Although such operations are not
10 detailed in FIGURE 6, it is to be understood that improper
11 responses or the lack of a response will transfer the process
12 to the function of block T44, as illustrated, to terminate or
13 transfer the call. On the contrary, if appropriate information
14 is received, the qualification unit T28 (FIGURE 5) receives and
15 stores the requested information. Consequently, the unit T28
16 contains: the caller's PIN number, the call type and the
17 merchandise code. That data is then tested within the
18 qualification unit T28, against reference data, in a process
19 step as illustrated by the query block T56 in FIGURE 7. **For**
20 **example, as indicated above, a request for a proposal, prompts**
21 **tests for recipients based on merchandise codes (block T54)**

22 **that comport to a request.** The details of the test are treated
23 in somewhat greater detail below; however, as illustrated in
24 FIGURE 7, if the tests are not successful, the process again
25 proceeds to the termination block T44; otherwise, the process
26 proceeds to a block T58 to implement the substantive
27 communication of the call.

28 **[0126]** The final test of the call involves operation of the
29 qualification unit T28 (FIGURE 5) in conjunction with the
30 storage unit T26. That is, for each buyer and vendor, the unit
31 T26 stores merchandise codes and, in some instances, other
32 special information. For example, typically, vendors may be
33 denied access to certain information. For example, a vendor
34 would not have access to the type calls: "A" (a special
35 offering of another vendor), "D" (another vendor responding to

1 an RFP) and so on. However, exceptions are possible and in
2 that regard it is simply important to appreciate that special
3 situations may be stored in the unit T26.

4 **[0127]** Returning to the routine situation, as indicated
5 above, each buyer and vendor is associated with specific
6 merchandise codes. In that regard, merchandise codes not only
7 facilitate and expedite communication but additionally, charges
8 and billing data (for storage in the memory T30) may be based
9 on active merchandise codes for a subscriber.

10 **[0128]** Pursuing a specific example, assume a caller,
11 identified as a vendor and otherwise qualified is pursuing the
12 presentation of a special offering. Further assume that the
13 calling vendor is associated only with hair products (Chart A,
14 code 472000). However, assume that the caller identifies the
15 "merchandise of interest" to be a water resistant sun skin
16 product, code 471234. Thus, the identified merchandise code
17 does not coincide with the caller's registered merchandise
18 code. In such a case, the processing is halted with the
19 consequence that the call is either terminated or transferred
20 to an operator. At this stage, likely operation would involve
21 referring the call to an operator. Thus, the qualification
22 unit T28 concludes the test by assuring that the entity being
23 represented by a call is authorized for access with respect to
24 the identified codes.

25 **[0129]** Once a caller has been identified, the control
26 computer T16 (FIGURE 5) functions primarily in conjunction with
27 the video file server T34 to implement the communication. Of
28 course, in instances where an appointment is sought, as
29 described in detail above, the function of the video file
30 server T34 may be relatively nominal. Note with regard to
31 appointments, that a caller may simply request an appointment
32 immediately within call types "E" and "F". That is, within the
33 concept of obtaining an appointment, a caller may simply seek
34 to speak with a particular vendor or buyer representative
35 immediately.

1 **[0130]** To consider the specific operations, assume that the
2 exemplary caller is a vendor with a special offering, i.e.,
3 call type "A". As a specific example, the caller may represent
4 a vendor entity dealing in distressed merchandise holding a
5 considerable volume of hair shampoo packaged for women, i.e.,
6 merchandise code "472147". With the merchandise codes stored,
7 the control computer T16 actuates the video file server T34
8 along with the audio response unit T18 to receive a video
9 presentation of the merchandise, that is, the hair shampoo.
10 Typically, the vendor will have organized the presentation
11 prior to making the telephone call so that the merchandise can
12 be variously demonstrated and various information including
13 pricing etc. expressed in the video presentation. Thus, an
14 effective record of the video presentation is stored in the
15 file server T34 essentially in the form of a sales presentation
16 for the hair shampoo, that is, product code "472147".

17 **[0131]** With the completion of the video record, the control
18 computer T16 actuates the storage unit T26 to isolate all
19 buyers associated with the product code "472147" identifying
20 hair shampoo. With the list of buyers identified and a video
21 presentation recorded, the subsequent operations involve
22 communicating the video presentation to the select group of
23 buyers. In accordance with the disclosed embodiment, the
24 identified buyer group is notified of the availability of the
25 demonstration. Thereafter, qualified buyers may establish
26 communication (call "B") through the telephone interface
27 structure T12 (FIGURE 5) to receive the stored video
28 presentation from the file server T34. Various specific
29 arrangements may be involved. The central traffic system may
30 maintain a record or log of all the buyers accessing the video
31 file server, which may be provided to the vendor, upon request.
32 A record of the time (provided by the clock) spent by each
33 buyer in viewing a video presentation may also be maintained.
34 For example, a specific buyer may terminate the video after
35 viewing it for only a few minutes, while another buyer may view

1 the entire video presentation. The vendor may request such
2 information to determine buyers' reactions to the special
3 offering, for marketing or other reasons.

4 **[0132]** In some situations, it may be particularly
5 advantageous for buyers to receive early notice of a special
6 offering by a vendor. Accordingly, it may be desirable to
7 implement a rotational order scheme or a random operation for
8 determining the sequence in notifying buyers. Specifically, a
9 random number generator may be incorporated in the control
10 computer T16 for ordering the list of buyers for notification.

11 **[0133]** Notices to buyers or vendors also may vary
12 considerably, depending upon individual programming
13 considerations. In some situations, vendors may provide a
14 special list of buyers or alternatively, exclude specific
15 buyers. All buyers and vendors are provided with a list of
16 participating members of the network, at registration.
17 Periodic updates of new members may be circulated from time to
18 time.

19 **[0134]** In accordance with the disclosed embodiment, the
20 control computer T16 simply actuates the auto dialer T14 to
21 establish telephonic communication with buyers after which the
22 audio response unit T18 notifies the buyer. Alternatives
23 involve the utilization of facsimile or the like capability or
24 various forms of electronic mail may be incorporated for
25 utilization. In any event, the select group of buyers is
26 notified that the presentation on a hair shampoo packaged for
27 women is accessible by interfacing through the telephone
28 structure T12. Responding buyers (call type "B") are qualified
29 as described above, then coupled to the video file server T34
30 to receive the video presentation. Thereafter, interested
31 buyers may directly contact the vendor, typically for further
32 video communication. Thus, the foundation for a transaction is
33 completed rapidly and effectively with substantial
34 communication of the goods involved and related considerations.

35 **[0135]** Another possibility involves type "C" calls, whereby

1 a buyer distributes a request for proposal. Again, various
2 communications may be accomplished to a select group or sub-
3 group of vendors based on merchandise codes. To consider a
4 specific form of communication in accordance herewith, after
5 qualification, a buyer might use video communication to notify
6 vendors with a graphic such as one illustrated in FIGURE 9.
7 FIGURE 9 illustrates an exemplary buyer request form providing
8 specific information of the merchandise. Blank forms may be
9 stored in a forms directory (e.g. menu-driven) or the like on
10 each buyers terminal. Thus, when making a request for
11 proposals, a buyer may simply access a blank form and enter the
12 specific information. Essentially, a merchandise code number
13 "472361" is supplied, indicating the specific product as also
14 identified in the graphic. After the notice has been sent to
15 select vendors, a message as represented in FIGURE 10 may be
16 transmitted to the buyer from the central traffic control
17 system TIS. Note that a check digit may be supplied.
18 Likewise, vendors may access blank forms, similar to the
19 exemplary buyer request forms, to indicate special offerings.
20 [0136] Following receipt of a request for proposal,
21 interested vendors may submit a video presentation as described
22 above. Alternatively, vendors may be invited to call for an
23 appointment or otherwise communicate their proposals to buyers.
24 Thus, the system affords considerable flexibility in
25 selectively communicating product information between buyers
26 and sellers using video formats.

27 [0137] In view of the above description, it will be apparent
28 that numerous operating formats, programs and layouts may be
29 accomplished using a wide variety of videophone equipment in
30 cooperation with computing and telephone apparatus. As
31 indicated above, the disclosed embodiments afford some
32 arrangements; however, the scope hereof should not so confined,
33 rather the scope hereof should be in accordance with the claims
34 as set forth below.

35